Containing Complete Reports of the Logging Congresses in the South and West.

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OCT 4 1913

American Lumberman

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CONSOLIDATED JAN. 1, 1899.

THE TIMBERMAN
ESTABLISHED 1886.

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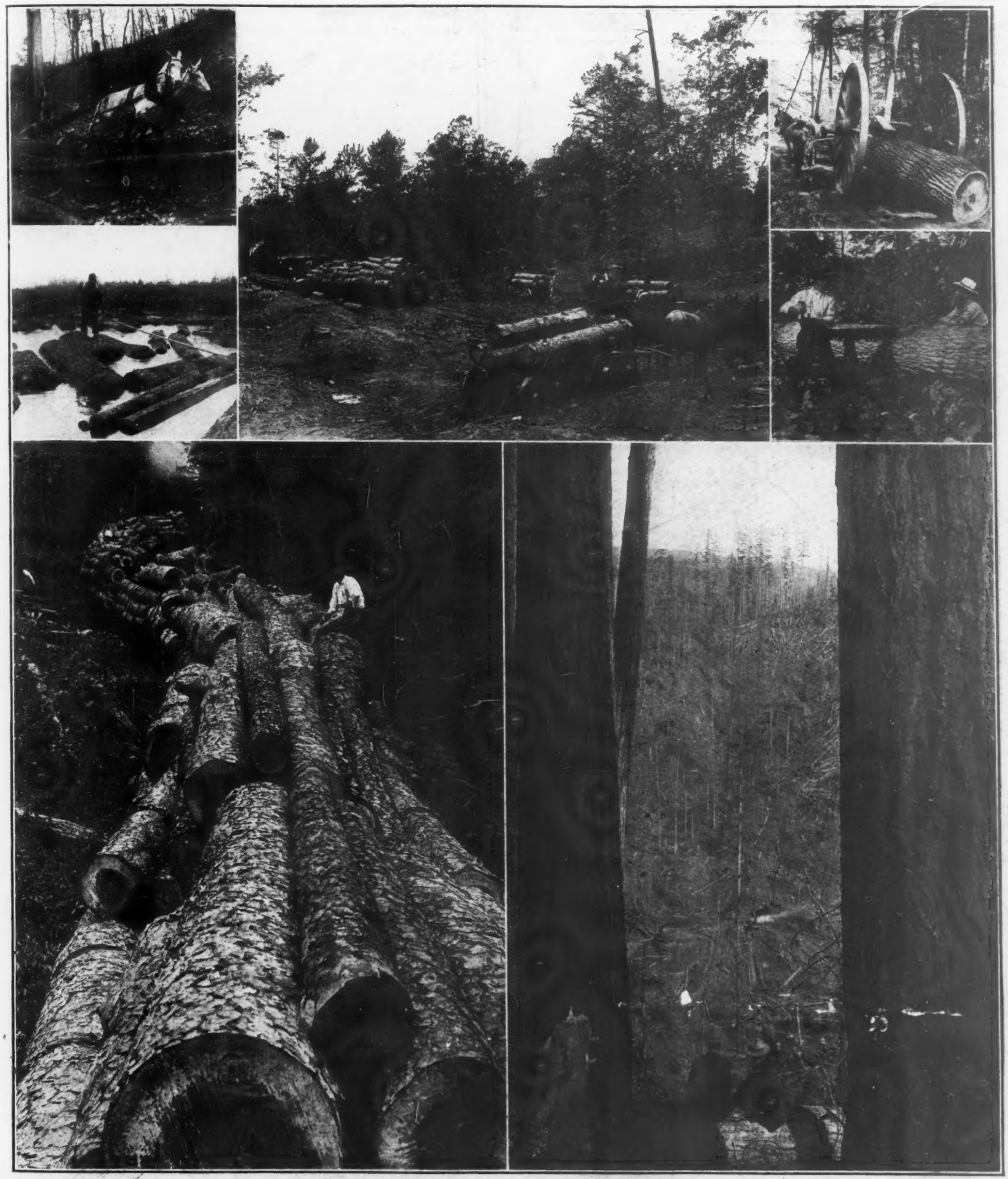

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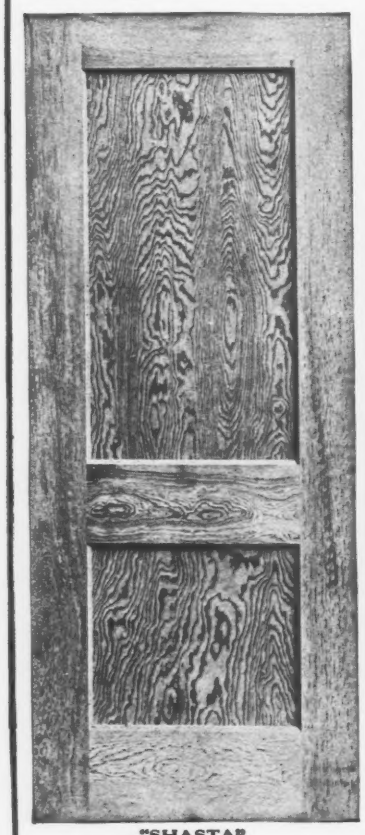

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SEATTLE, WASHINGTON.

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American Lumberman

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ENTERED AS SECOND CLASS MATTER JANUARY 27, 1899, AT THE POSTOFFICE AT CHICAGO, ILLINOIS, UNDER ACT OF MARCH 3, 1879.

Copy for new advertisements should be in this office not later than Tuesday, changes in current advertisements not later than Monday.

Index to Advertisements, 96-97.

CHICAGO LUMBERMEN'S BUILDING.

On another page of this issue will be found the tentative plans of the building committee appointed by the Lumbermen's Association of Chicago looking to the erection of a structure to be known as the "Lumbermen's Exchange Building." Other cities have tried out this idea and it is found to work to the benefit of all concerned. The Lumbermen's Club and the Lumbermen's Association of Chicago would be neighbors on the top floors, and, with most of the lumbermen domiciled under one roof, meetings could be very quickly arranged and the interests of the trade looked after with little loss of time, and opportunity would also be afforded for a community of interest to be developed that the AMERICAN LUMBERMAN believes would redound to the betterment of the trade in this city as a whole.

It would certainly be a great time saver to out-of-town buyers and sellers, for half a day is consumed in making two or three calls, as the lumbermen are scattered all over the loop district. The saving that would be effected in time and the greater convenience that would come from closer communion between lumbermen would, it is believed, go a long way toward paying the rent. The committee is to be congratulated for the able manner in which it has handled this project and brought it to a tangible issue.

OPPORTUNITY FOR CO-OPERATION.

At the annual meeting of the Southern Logging Association, held at New Orleans, La., this week, a query from the president brought out the fact that only one of the superintendents received from the sales office each day a list of the stock required to fill the orders that had been entered that day.

One wideawake and successful superintendent said the sales manager ought to know at least six weeks in advance of actual cutting, from personal observation in the woods, what kind of timber is to be operated in.

Some operators, it was shown, are putting a man on the log deck to tell the sawyer exactly what kind of stock to cut from each log.

The daily list of stock wanted, the sales manager's visit to the woods and the saw boss on the log deck are attempts at a kind of coöperation that if carried into effect successfully will remove causes for some of the hitherto mysterious slumps in some items. In this connection some of the logging superintendents tacitly admitted that the cutting of bill stock on special orders involved much additional logging expense that could be obviated if coöperation between the sales and logging forces were more close.

Millmen have long talked about the advisability of coöperation among independent operators. Is it possible that some of them have overlooked a splendid opportunity for profitable coöperation among the departments of each individual operation?

INTERDICTING WOODEN SHINGLES.

The Birmingham (Ala.) anti-shingle ordinance went into effect this week. Under its provisions to construct a building of any kind with a shingle roof within the city limits of Birmingham is against the law. Other cities are adopting similar ordinances. Most of them provide that roofing material shall be "fireproof." A lumber manufacturer tells a story about a man who came into his office not long ago with some alleged fireproof shingles with which the agent thought that the lumberman's mill and other buildings should be covered. In answering questions he said they were fireproof, contained no tar or oil and could not burn. The lumberman took one of them, held it perpendicularly and applied the flame of a match to its edge. It blazed up so rapidly that he could hardly drop it quickly enough to prevent his fingers being burned. "You should not test it that way," said the agent. "It won't burn on the surface if you hold it flat." The wood shingle industry probably will present to the public before long a shingle inexpensively treated that will be fire resisting, even if not fireproof. But in the meantime for lumbermen to see that these ordinances are obeyed, if their enforcement is insisted on, by the use of really fireproof material will be entirely proper.

A PERMANENT INDUSTRY.

The North Carolina pine industry is in some respects remarkably fortunate. The wood upon which it is based is shortleaf yellow pine with some admixture of other, closely related species. So much of the territory, because of its lack of sufficient drainage or because of its soil qualities, is better adapted to forestry than agriculture, and the trees grow with such marvelous rapidity in that congenial climate, that North Carolina pine is likely to be an important factor in the eastern markets of the United States when the pines of some other sections have practically disappeared. It is one of the few and limited sections of the country in which the foresters say that tree growing can now be profitably carried on.

In its location the North Carolina pine industry is equally fortunate, covering the ocean plain of Maryland, Virginia and North Carolina. It abounds in natural or easily made artificial waterways, so that a majority of the product can be shipped from the mills to market by water. The little lumber schooner carrying anything up to a hundred thousand feet is a feature of that country. From Charleston to Norfolk, Philadelphia and Baltimore lumber can be carried on protected waterways; and it is but a short open-sea voyage to reach New York and Long Island Sound. Therefore the North Carolina product is prominent in the markets of the East and promises to hold its position for indefinite years.

FOOLISH TALK ABOUT WASTE.

Some time ago an instructor of economics and sociology in Smith College had printed in the *Independent* some startling statements as to forest waste. He had it that careless logging methods destroyed one-fourth the wood in the forests; that the mill waste is from 30 to 60 percent and the factory waste one-fourth of what comes from the mills.

Assuming that the mill waste of "from 30 to 60 percent" may be considered 45 percent on the average, his estimate figures up 69.37½ percent of the contents of the tree, leaving only 30.62½ percent utilized. Then he made an estimate of 23,000,000 cubic feet of timber annually cut from the forests and the value of the waste at 650,000,000 a year.

Of course, the newspaper editorial comment is, "Here's another clew to the mystery of the high cost of living!"

But where does Mr. Chapin get his figures? Twenty-three billion cubic feet is 276,000,000,000 feet board measure. Not counting cordwood, which, by the way, is not wasted, and some other items like hoop poles etc., the Government statisticians have never been able to figure up the product of the forest as amounting to more than 55,000,000,000 feet board measure all told. Probably the worthy professor has tried to measure as making up the contents of the trees not only the trunks and big branches but the twigs and leaves as well. And then he might be asked if he would consider waste the leaving in the woods or at the mill or factory of material that would cost much more to convert into some useful form than it could be sold for. Wouldn't that be waste—and waste of a more serious form?

A compilation by an iron trade paper of the steel car capacity of the car building plants of the country shows that the total maximum capacity, "dependent upon being able to secure adequate supplies of the necessary material and labor," is 5,230 cars a year. The largest capacities are of the American Car & Foundry Company, 1,680, and the Pullman Company, 1,800. If on January 1 last the number of wooden cars was 46,926 it is evident that the capacity of the car shops for the manufacture of steel cars will have to be doubled if wood is to be replaced by steel by 1918.

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REVIEW OF CURRENT LUMBER TRADE CONDITIONS.

Trade continues in a hesitating mood. There appears to be a general feeling of apprehension and unrest as to what the future holds in store. Some, while admitting that they do not expect a serious depression following the enactment of the tariff law and believe that money will rule on an equal basis for the remainder of the year, are hesitating considerably in anticipating the future demand. This applies to nearly all lines of trade. Others look for serious disturbances in the business world after the law makers get through with the revision of the tariff downward, but all believe that there will be a decided revival with the lifting of the suspense over legislation and an unmistakable stimulus will be injected into the trade. Notwithstanding all the deterrents that make for poor business fair business seems to be in progress, if the bank clearings be taken as a criterion. The industries of America, however, seem to be marking time. Conditions in the steel trade do not show much real improvement; although during the last two or three days there has been some talk of the railroads getting into the market actual buying is at a low ebb. Orders for structural material during September were the smallest booked in any one month thus far this year. There was also a distinct slowing up of pig iron during the last two weeks of September.

* * *

While some seasonable trade has been materializing since the middle of September and there is a fair movement of lumber that is inevitable in any season, the volume forces the conclusion that so far there has been only a slight approach to normal fall business. Buying continues on the strictly hand to mouth basis; in other words, it is confined to lumber needed for current distribution and that which can be measured by current consumption. Retailers and users of factory stocks of all kinds and wholesalers are not stocking up far ahead of demand and none seem to do so except at prices that are bargains and that would be too good to turn down. Manufacturers' agents even find those who refuse to buy much stock ahead at any price. Prices continue soft and irregular, and will so continue until such time as the buying will warrant an advance. In some spots there is a hardening tendency on special items that happen to be scarce or out of stock and are wanted in a hurry.

* * *

The financial and general business situation is not favorable to an increasing demand for lumber. Although the crops turned out a fair average from the country as a whole business has not responded in that degree that it has in other years. An increase of 120,000,000 bushels in the corn prospects in seven of the leading States during the last two weeks is shown by the *Prices Current's* report, the principal improvement being 46,000,000 bushels in Illinois, while Iowa is raised 32,000,000 bushels. The total output for Ohio, Indiana, Illinois, Missouri, Iowa, South Dakota and Nebraska is now estimated at 1,289,553,000 bushels, as against the estimate of 1,169,318,000 bushels September 15. The heavier lumber buyers, such as the railroads and large industrial concerns, continue to withhold orders of the magnitude usual at this season. All seem to be waiting for the clearing away of the doubts of financiers, bankers and other men of big affairs. The effect of this condition is to restrict expansion and cause the curbing of credit, all of which is felt in the lumber business because it limits buying to a restricted range of requirements and confines to immediate wants such buying as there is. Reports from several cities indicate an increase in building operations, as compared to operations in the corresponding month last year. This branch of the business has been the mainstay of the lumber trade throughout the year and should fairly maintain its volume to the end of the season.

* * *

Judging from late reports from Texas the yellow pine manufacturer will be forced to curtail whether he wants to or not. Excessive rains of the last twenty days have played hob with wood operations and resulted in the closing down of many mills in Texas and Louisiana. Reports from Houston indicate that the reduction in that territory has reached 100,000,000 feet. Rains are falling steadily, with no evidence of early letup, and some manufacturers believe that by the middle of October the production of yellow pine mills in Texas and Louisiana will be fully 500,000,000 feet less than normal. This may be a blessing in disguise, for the southern pine output has been altogether too large for going wants, and now with an enforced curtailment manufacturers will probably make more money a little later, when general business has picked up and the lumber consuming interests are again in the market. All the mills at Orange, Beaumont and Lake Charles are said to be closed, and reports are that mills generally are down all along the Kansas City Southern, the Santa Fe, Iron Mountain and other roads operating in the lumber belt of Louisiana. Even if the rains should stop now fully two weeks must elapse before the damage done can be repaired and operations be restored to normal capacity. The rainfall is considered the heaviest ever experienced by the lumber industry of Texas and Louisiana.

* * *

From several centers come reports of considerable improvement in the yellow pine situation, but as far as can be gleaned the market continues under the control of the buyers as to prices. At Houston the demand is still small; the notable feature of the situation, however, is the fact that stocks of dimension are said to be badly broken. All items in No. 1 and No. 2 dimensions are in short supply, with the exception of 2x6s. Railroad demand for all kinds of material is still slow. Occasionally a schedule is placed to help things along. The St. Louis & San Francisco Railroad is reported to have placed recently some big sized orders for timbers and sills. The Santa Fe has been a steady buyer, and the recent rains are expected to bring about a bigger demand for bridge material. The export situation is far from satisfactory. Demand has been fairly active, but values are much too low. A more active inquiry is noticed for silo stock in Texas. At Shreveport strength is reported in the market, but while slashing of prices has ceased the values are still unsatisfactory. The cotton crop is reparted to have been greatly damaged by the rains, but it is thought that the bulk of the crop will be picked. At Lake Charles, while demand is hardly up to that of a month ago, manufacturers believe that inside of a few weeks trade will be back on a normal basis. In Missouri wholesalers and manufacturers report a steady volume of trade. Retailers and lineyards are beginning to place their orders early in St. Louis, believing that building operations as well as repairing will be active this fall. In the Georgia-Florida district conditions are about the same. Orders received are mostly for small lots and prompt shipment. These orders, however, seem to be of nearly large enough volume to meet the present production. The increased output, however, would serve only to depress prices, which are said to be low enough. Large quantities of switch ties are unplaced and ties are not being taken on very rapidly by the mills. Some placements during the last week were at $12 f. o. b. mill. This stock is confidently expected to bring higher plices a little later. At Mobile the sawn timber trade is very quiet, with no inquiries coming from abroad. There has been a fair movement of lumber to South American ports, about two and one-half million feet having been shipped.

* * *

Confidence among northern pine operators is the rule, inspired by the favorable outlook of crops in the Northwest. There has been some improvement in coarse lumber, especially that which goes into box material. Good stocks have done comparatively well all season. At Chicago the northern pine business is called quiet, with relatively more inquiries than orders. Yards are buying only as they need lumber for immediate turnover to their customers. Box grades are strong and in the Saginaw Valley the movement of lumber has been small. Local dealers who get their lumber from the Georgian Bay district seem to hang back until the tariff bill shall become a law and save them $1.25 a thousand on all lumber imported during the season of navigation. Much lumber, however, is wanted and manufacturers are forced to ship to get the lumber on their docks before navigation's close. In Minneapolis the market has been affected by the competition of other woods, but the movement of low grade lumber is active and factory stock is moving in larger quantities. Retail yards, however, are not heavy buyers. Farmers are plowing and threshing, with the result that the country trade is slow at this time. At Buffalo the demand for low grade lumber exceeds the supply. At New York a better movement is reported. While actual orders are light the feeling among wholesalers seems to be better. Prices are steady. At Pittsburgh are heard reports of a softening in low grade prices. At the head of the Lakes buyers were more numerous the last week and several deals are said to be pending.

* * *

Demand for west Coast products is still slow. There is a lack of rail trade and California demand is below normal and is considered meager for the season. Foreign trade is making the best showing of any branch of the business. Mill capacity is still too great for the demand and the output is being curtailed. Some of the mills are reported intending to shut down altogether. Many of the red cedar shingle mills have closed on account of the slack demand and prices that yield no profit. Inland Empire shop lumber for the midcountry trade is selling well and promises to continue, because the supply of good shop lumber is none too plentiful. California shop white pine and sugar pine are also in good demand. Manufacturers are not impressed favorably with the outlook for the fall. The Bellingham Bay cargo shipping mills are all busy on orders received this summer, but new orders are very scarce. The log market is said to be weakening also. Movement of crops from the Inland Empire to tidewater has started and there is a scramble for cars. It is feared that while the railroads have been able to cope with the situation so far rolling stock will be scarce a little later. Now would seem to be the accepted time for retailers to stock up, as the bottom of the toboggan is believed to have been reached and the worst of the quiet season is expected to pass before long. The figures compiled by the West Coast Lumber Manufacturers' Association show that the cut exceeded shipments in August by 24,549,296 feet, although the shipments for the eight months for 1913 exceeded those for the corresponding period in 1912 by over 105,000,000 feet; but the cut also exceeded the shipments for that period by over 62,000,000 feet. In the Flathead Valley, while the volume of business is fair, prices are badly off; mills have a good number of orders on their books but seem not to be over-eager to enter new business at prevailing values.

* * *

The hardwood market seems to be broadening and gradually assuming fall proportions. Buyers display a little more anxiety regarding their requirements. This is especially noticeable in ash in all grades, in plain oak and quartered oak. The upper grades of cottonwood are fairly active, although box boards are said to be slow. Sap gum shows a little more activity but red gum in the upper grades is not nearly so lively. The lower grades of cottonwood and gum are in good demand, with prices well maintained. Poplar shows some improvement, especially in the upper grades. Chestnut remains rather dull, except in the sound wormy grades, which are being bought freely by panel manufacturers. With one or two exceptions reports from different markets are to the effect that the hardwood business is improving gradually. Demand for the northern woods, while not heavy, is still heavy enough to care for stocks, that are said to be lighter than usual. Northern hardwoods have been moving actively all the year and are firm. Flooring has been in excellent demand.

* * *

Hemlock is fairly active at all Great Lake markets. The supply, while plentiful enough to meet present needs, is none too large and the demand in the cities absorbs much hemlock building material, so that the manufacturer feels pretty comfortable over the outlook and is firm when it comes to cutting prices.

* * *

More activity is noted in the North Carolina pine market. Signs of an unusually large demand can not be detected but inquiries are more frequent and orders larger. Shipments in September were much heavier than those in August. Some advances have been noted in the better grades of rough lumber, but they are slight. Dimension stock is brisker than for some time and partition, ceiling and flooring are also taken in good quantities. The feature of the market is the fact that the curtailment at most of the mills has redounded to the benefit of the manufacturers. During August shipments were over 2,000,000 feet larger than the cut; the same applies to September. Yards and other consumers have been buying for immediate requirements only, and with anything like a normal demand this fall prices should be greatly enhanced.

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The situation this week has developed no new features in cypress. Mixed car business is of about the usual volume and requests to rush shipments are as frequent as ever. Retail yards are buying for immediate needs only. Prices are firm. Along the Southern Pacific the car situation is said to be unsatisfactory. In the East quotations are slightly firmer, although orders are small. The larger yards seem to be supplied with good assortments. At Buffalo the demand for tank stock and door material is normal for the season. The outlook in St. Louis is said to be much better, stocks moving more freely.

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West Virginia spruce is not moving in as large a volume as a month ago, yet notwithstanding this manufacturers refuse to cut prices, many of them having orders booked for at least a month ahead and believing that by that time there will be no reason to make reductions. In Pennsylvania spruce production is much slower than many expected, which is proved by the scarcity of stock in the Pittsburgh market in face of a lighter demand than usual. Prices are steady and unchanged.

THE RAIN GODS HAVE TAKEN A HAND.

A stern Providence has come to the relief of the lumber producers of the central South and the Southwest and of the lumber market. Almost unprecedented rainfalls have accomplished the curtailing of log input and lumber product which the lumbermen were so reluctant in bringing about of their own free will. Where so much damage has been done to property and farming interests it seems ungenerous to rejoice, but purely from a lumber market standpoint this rain, that has fallen alike upon the just and the unjust, is a matter of congratulation.

Wednesday morning the AMERICAN LUMBERMAN received the following telegram from Houston:

Rains of the last week have played havoc with the mills in Texas and Louisiana, and reports received at the offices of the concerns maintaining headquarters in Houston indicate that because of the rains already fallen the production of lumber in this territory has decreased 100,000,000 feet. If the rains were to stop now it would be two weeks before operations could be resumed, thus effecting a decrease in production of 200,000,000 feet more, but the rains are falling in a steady downpour with no evidence of early cessation, and the conservative estimates by well posted manufacturers are that for the last week in September and the first half of October the production of the yellow pine mills in Texas and Louisiana will be 500,000,000 feet less than normal. The entire chain of the Kirby Lumber Company mills are down, and for five days from the entire system only one car of lumber has been shipped. All the mills at Orange, Beaumont and Lake Charles are closed, and reports received here from points on the Kansas City Southern, Santa Fe, Iron Mountain and other roads operating in the lumber belt of Louisiana indicate that the mills generally are down, with log ponds swept away at many of the plants, logging railroads out of commission and not a wheel stirring. Should the rains cease now fully two weeks will be required to repair the damage and restore operations. It is the most stupendous and far reaching rain damage the lumber industry of Texas and Louisiana has ever experienced.

The above was from a conservative man, with exceptional opportunities for observation. Wednesday afternoon the following dispatch came from Beaumont, Tex.:

Every sawmill in this section, numbering 118, was shut down today for two weeks on account of high waters.

Floods are sweeping the timberlands of southeast Texas and southern Louisiana, and if the water does not soon recede mill machinery will be damaged to the extent of many thousands of dollars.

People are vacating their homes and fleeing to Beaumont. It is feared Jefferson County will experience a total crop loss. Train service is demoralized between here and New Orleans.

Earlier mail advices from operators gave a hint as to the conditions prior to the rains spoken of above. One mill concern writing September 24 stated that for nine successive days there had been rain every day. Another that it rained steadily from September 6 to September 18, during which period the company was unable to make any shipments whatever. Advices from several Louisiana mill points were to the same effect.

On the other hand, advices received up to this week were to the effect that mills were running about normally on logs that had been accumulated before logging operations were materially affected. One Louisiana operator put it this way: "Most of the mills have enough logs to run, but no doubt will be compelled to stop later on; that is, the larger mills. The smaller mills where logs were hauled in on wagons have been closed for the last thirty days at least." Nearly all advices from either Texas or Louisiana say that shipments have been seriously interfered with.

Now, however, the tremendous rainfall has not only stopped logging but in many cases has forced the mills themselves to close. If the estimate from Houston that weather conditions will by the middle of October have reduced the output in the yellow pine mills in Texas and Louisiana by 500,000,000 feet is correct the market must certainly respond. From the narrow viewpoint of market conditions and prices the news from the South is the most cheering that has been received for many a week.

THE TASK OF THE LOGGER.

Modern logging began with the adaptation of the steam railroad to log hauling—and that was less than forty years ago, for about the middle of the '70s Scott Gerrish managed to get an old locomotive engine over on to his logging operation in central Michigan so that he could put steam and rails to doing the log haul work.

Until about that time primitive methods had prevailed in the woods; ox teams were common, though in the northern pine country horses had largely displaced them; saws were coming into use for felling timber, and the methods of road building, banking and river driving had been improved. But in the eastern and northern part of the country the logger of 1770, if he could have revisited the woods in 1870, would have felt at home.

Water had been the main dependence for the transportation of logs; but about that time, with the lumber demands developing rapidly and with the forests pretty well cut away from the natural waterways, lumbermen found that they must go so much farther back for their timber that the hauls became too long for economy. Thus came in the logging railway, and with it a new era in logging methods, appliances and machinery. Already on the Pacific coast the necessities of the problems presented by the big trees of that section had been crudely worked out by the adoption of special machinery and methods, and from that time on progress was very rapid. New methods and new devices for getting logs from the stump to the yards were invented and the assembling of logs became a science. There was no pause in this process of development, until now in the most modern plants steam is applied to practically every department of the logging business except for actual felling of the trees.

This development was, however, more or less disconnected. Different sections and different individuals would work out their own ideas on independent lines. Coöperating with them were the manufacturers of logging equipment, who apparently were rather disposed to resent standardization than to assist it, for each had his own machinery embodying his own ideas, and seemed to hope for future business in the development of his peculiar notions.

In this rapid development, moreover, there was too little study of the economic problems involved. A new mechanical method might be manifestly cheaper than an oldtime hand method, but there was not proper study of the comparative costs of different mechanical methods nor any proper alignment of the different parts of a logging operation.

The human factor was affected also. Instead of a logging operation being a half savage foray into the woods to bring down to the mills the spoils of conquest, logging became a separate industry with its own problems, requiring men skilled with machinery as well as with an ax and saw, peavy and pike pole. A certain permanency became attached to a logging operation that involved large investments for machinery, and so men were required to live in the woods the year round. Released from dependence upon streams, splash dams, snows and floods the business could go on throughout the year, and thus the problems involved in permanent settlements were extended from the mill towns to the woods. Of recent years the insistent demands of forestry have had to be recognized, adding new problems to the multitudes already in hand.

It should not be supposed that the broad gaged, big lumbermen of the country were ever disregardful of the real problems before them; but until within a few years they were so busy in answering the questions that each season brought in their own especial work that they could hardly find time for the correlative work that was necessary. Now, however, has come the period of the logging engineer and the time when the logging business is being standardized and systematized.

To every logger myriads of questions are presented that have been answered in one way or another, satisfactorily or not; but these answers are scattered through a thousand logging camps, widely separated from each other, hidden in the recesses of the forests or mountains. To gather these varied answers from where experiment and experience have developed them into one compact body of logging science is the work that is now being done by the loggers—whether they are loggers exclusively, or timber owners, mill owners, or men interested in other departments of the lumber industry. The scope of this work is almost staggering to the mind.

Go through the columns of this issue of the AMERICAN LUMBERMAN devoted to the Pacific Logging Congress, held at Spokane, and the Southern Logging Association meeting at New Orleans, and an idea—but only an idea—can be gained of the complexity and difficulty of this work of standardizing a great industry; of arranging and compacting experiment and experience into knowledge; of answering not merely the mechanical but the human questions as well.

UNDERBILLING AT JACKSONVILLE.

The Georgia-Florida Saw Mill Association has taken steps to put a stop to the pernicious practice of underbilling by certain unscrupulous brokers that as has been discovered has been in vogue for some time. The practice of underbilling in steamship cargo shipments is said to have been carried on so extensively in Jacksonville that the amount of undercharges in the course of a single month aggregated several thousand dollars, besides exercising a depressing effect upon the market in the way of unfair and unlawful competition.

Secretary E. C. Harrell declares that in his opinion the prevailing market would be at least a dollar per thousand better if it were not for the system of underbilling. As an illustration, Mr. Harrell cites the recent case of an eastern buyer who accepted an order for more than two million feet at at least $1 below the actual market price.

The attention of the steamship companies has been called to the whole general practice of underbilling prevailing at the Jacksonville port, with concrete illustrations to substantiate the charges. One of the steamship companies has replied that it has started an investigation with a view to eliminating this practice, if it shall be found to exist, and to prevent it in the future.

A large percentage of the lumber manufactured in the southeastern district finds an outlet to the upper east coast market through the Jacksonville gateway, hence the practice of underbilling, when carried on to any considerable extent, as has been the case at Jacksonville, gives the unscrupulous broker a decided advantage over his legitimate competitor, and is a very large factor in keeping the market depressed. As an illustration of the manner in which this practice has been conducted, a cargo of assorted sizes, dressed four sides, will run approximately 16 percent off the rough size, per thousand feet. Certain brokers, it has been found, have been making it a practice arbitrarily to take off 25 percent, thereby exceeding the space reservations in boat bottoms, which amounts to $2.50 a thousand feet. The fault, Mr. Harrell explains, lies in the fact that the steamship companies have to all appearances accepted the estimates of the shippers without reservation, thereby not only incurring heavy freight losses themselves but unwittingly, it is presumed, inflicting a direct injury on the honest shipper. Some gratifying incidents have come to light as a result of the exposure of this pernicious system of underbilling. One large shipper, who has an ingrained belief in the efficacy of honesty, made the discovery that some of this own people had recently been underbilling. He ordered an immediate examination of the records and sent the company's check forthwith to the steamship company for more than $500, with a letter expressing his profound regret that his concern should have been guilty of such an evil practice and explaining that it had been done without his knowledge or consent. Another local shipper recently sent his company's check to the steamship company for about $200, covering an under-estimate which had unwittingly been made.

Most of the dealers in Jacksonville, as elsewhere, are honest and would scorn to underbill, but some, now that the searchlight has been turned upon their business methods, will have to change their ways or else their business methods will be called to the attention of the Department of Justice, which Mr. Harrell says will be done unless the practice ceases at once. The crooks will always find use for their misdirected abilities, and now that underbilling in railroad shipments is no longer profitable the vessel lines present themselves as an attractive mark for them.

APPROPRIATIONS FOR TRACK WRECKING.

Gradually are coming to light figures bearing upon the steel versus wooden car proposition. A few years ago J. J. Hill stated that five billion dollars should be expended by the railroads in new lines, second track, increased terminal facilities, new rails, equipment etc. It is now proposed that all roads doing an interstate business shall replace their wooden car equipment with steel by 1918, or in little more than four years. Other phases of the matter are discussed elsewhere, but what this means to the railroads in the way of expense has been determined by a special committee of the railroads.

The total number of cars in passenger service on 247 roads at the end of 1912 was 57,493. Of these 7,271 were steel, 3,296 steel underframe, and 46,926 of wood. The railroads' estimate of the cost of replacing these wooden cars is $614,619,100, on which the interest charge at 5 percent would be $30,730,955. But steel trains are so much heavier to haul than wood that they require heavier engines; consequently an enormous amount of new motive power must be acquired that will probably bring the cost of the new equipment well up toward a billion dollars, or pretty nearly a fifth of Mr. Hill's estimate, which would not include this item of replacement of wood by steel. No wonder the railroads facing such a charge are demanding greater revenues.

Looking at it in another way, since the first essentials of safe railroad operation are good track, safety appliances in the way of signals etc., and discipline, how far would this billion dollars go toward supplying the first essentials? A long way, certainly. The Washington correspondent of the AMERICAN LUMBERMAN has been digging into the statistics available at the office of the Interstate Commerce Commission and he finds some interesting facts that seem to bear out the declaration of this paper that certain classes of train accidents—those due to derailments—are increased by the heavy steel trains, though the statistics are not definite enough to be conclusive. It should be remembered that the steel cars have been operated only about four years. Beginning 1909, there were only 629 in the entire country; at the beginning of 1910 there were 1,117; at the beginning of 1911, 3,133, and the beginning of 1913, 7,271. Derailments as shown by the Washington figures have increased in number steadily since 1909. When all classes of trains are taken into consideration there were 5,259 derailments in 1909 and 13,698 in 1912. Be it noted that many steel trains have been derailed because they have torn up the track under them, but the damage they have done to track undoubtedly is reflected in derailment of other trains that followed them.

In another table from Washington the derailments of passenger trains for a series of years were shown to be as follows:

1908	31	1911	67
1909	31	1912	25
1910	68		

Nineteen hundred and twelve was a fortunate year in respect to derailments, but serious in respect to collisions, fatalities and injuries. These figures, inconclusive as they may be and liable to wrong deductions, should nevertheless cause the Interstate Commerce Commission and Congress to hesitate before requiring the railroads to spend a billion dollars on track wrecking instead of track improvement.

DOMESTIC.

General.

Thomas Mott Osborne, of Auburn, N. Y., chairman of the New York State Commission on Prison Reform, entered Auburn prison September 29 to serve a self-imposed sentence for the purpose of psychological research.

Lieut. Gen. Nelson A. Miles, retired, Brig. Gen. Charles King, soldier and author, and several other distinguished soldiers of Indian wars will take part in battles with Indians on the Pine Ridge Indian Reservation before a moving picture camera. The War Department attaches considerable value to the pictures to be made, on which, it is said, $100,000 will be spent.

Five thousand delegates, representing every State in the Union, attended the opening of the third annual session of the American Roads Congress at Detroit September 29. The convention will continue until October 4.

Secretary of War Garrison September 29 announced that he will hold hearings on the question of Chicago's lake front park project before taking final action on Brig. Gen. Bixby's adverse report.

The Soo Railroad Company during the coming year will build a steel and concrete iron ore dock at Ashland, Wis., at a cost of $1,000,000.

The industrial welfare commission of Oregon has adopted a ruling, effective November 23, fixing a minimum wage of $9.25 a week for adult women clerks who are not apprentices, and defining eight hours and 20 minutes as the maximum day's work.

In celebration of the fiftieth anniversary of the emancipation proclamation an exposition will open at New York City October 22 that will show in a general way the industrial, educational and religious progress of the negro. Several hundred thousand negroes are expected to attend.

Logan W. Page, director of the office of public roads, has extended from October 15 to March 2, 1914, the time in which school children living on farms may submit essays on the repairing and maintaining of earth roads, in competition for a gold medal and two silver medals to be given by the Department of Agriculture.

Approximately one in every 400 inhabitants of the United States is employed by the Postal Service.

Acting Governor Glynn, of New York, has issued a proclamation naming October 9 fire prevention day throughout the State.

Wichita Falls, Tex., September 27 rejected the commission form of government.

A recount of every sack of silver dollars stored in the United States mint at San Francisco, amounting to $61,395,000, has been ordered because of the discovery of the loss of $7.

The question of the right of a President to withdraw public lands from entry will be brought before the United States Supreme Court for a ruling by the United States circuit court of appeals for the eighth district. Thousands of acres of oil lands in Wyoming and California, valued at hundreds of millions of dollars, are involved.

A farewell dinner will be given on the roof garden of the New York theater, New York City, to Colonel Roosevelt, who will sail for South America October 4.

A resolution demanding an amendment of the Federal banking laws, providing for the establishment of rural banks that will have funds that may be loaned farmers for long periods at nominal rates of interest, was adopted September 25 by the resolutions committee of the Farmers' National Congress in session at Plano, Ill.

Attorney General McReynolds will bring a civil antitrust suit soon to compel the Southern Pacific Railroad to give up the Central Pacific in accordance with the announcement he made in connection with the Union Pacific-Southern Pacific dissolution.

While delivering the oration of the day at the dedication of the site of the monument to Juan Rodriguez Cabrillo, discoverer of San Diego Bay, Senator John D. Works, of California, September 25 declared it the duty of the United States to intervene and restore order in Mexico.

State Comptroller Sohmer, of New York, September 27 received a check for $2,500,000 in payment of the inheritance tax on that part of the estate of the late J. Pierpont Morgan over which an agreement has been reached between the representatives of the comptroller and the Morgan executors.

Declaring that the people of North Carolina lose $12,000,000 annually because of the poor condition of the State's highways, Governor Locke Craig September 27 issued a proclamation designating November 5 and 6 as good roads days and calling upon all patriotic people throughout the State to work upon its public roads on those dates.

The first attempt to operate the locks on the Panama Canal was made September 26 when the tugboat *Gatun*, drawing 12½ feet of water, was passed successfully through the Gatun locks.

Announcement was made September 29 that the appeal of former Police Lieut. Charles Becker, of New York, and the four gunmen from the sentence of death for the murder of Herman Rosenthal, the gambler, will be argued before the court of appeals October 13, provided the impeachment trial of Governor Sulzer is concluded by that date.

Washington.

A report of the Weather Bureau places the total loss caused by the Ohio floods last March at $163,000,000. This sum includes loss to railroad, telegraph and telephone lines and to farm property, including prospective crops.

Secretary McAdoo has deposited in national banks $24,159,000 of the Government's $50,000,000 crop-moving fund. The South has received nearly all of its quota. Deposits now are being made in the Central West.

Secretary Daniels has ordered the elementary academic course at naval training stations extended from three to four months to give apprentices more thorough training.

Postmaster General Burleson September 26 ordered the 1913 edition of the postal laws and regulations, effective October 1, to be published.

Secretary Redfield has sent W. A. Graham Clark, commercial agent, to China to investigate the reason for the decline in the sale of American cotton goods in that country. Whereas $28,000,000 worth of cotton goods from this country was sold in China in 1905, in the fiscal year of 1913 less than $6,000,000 worth was sold.

Byron R. Newton, of New York, was nominated by President Wilson September 25 as assistant secretary of the Treasury.

Samuel Untermyer, of New York, September 29 recommended to the Senate Banking and Currency Committee the general revision of the details of the administration currency bill to insure the carrying out of the purposes of the measure.

President Wilson will announce soon the reorganization of the Isthmian Canal Commission and the appointment of a governor to prepare for the transfer of the completed canal to the civil authorities.

To lower the price of meat, Assistant Secretary Galloway, of the Department of Agriculture, recommends the establishment of municipal abattoirs throughout the country, particularly in the districts not close to large cities and packing houses.

A bill introduced in the House September 25 by Congressman Kirkpatrick, of Iowa, provides as the penalty for gambling of any sort for the immediate dismissal of Government employees and men of the army and navy.

Secretary Garrison, accompanied by Chairman Hay and other members of the House Military Affairs Committee, left Washington September 25 to inspect the experimental cavalry camp at Winchester and the army remount station at Fort Royal, Va.

Former United States Senator Obediah Hardner, of Maine, has been selected by President Wilson for the international joint commission having jurisdiction over boundary disputes between the United States and Canada, to succeed Frank S. Streeter, of Concord, N. H.

An executive order just issued provides for the punishment by imprisonment of from six months to two years of persons who return to the Canal Zone after they have served a sentence of imprisonment there and have been deported.

By a vote of 254 to 103 the House of Representatives September 30 accepted the conference report on the tariff bill.

An increase from only 90,000 tons in 1880 to more than 2,500,000 tons last year has taken place in the production of gypsum, a mineral principally used in manufacturing plaster, in the United States, according to statistics by the Geological Survey. The production last year was valued at more than $6,500,000.

The foundation for a monument to Commodore John Barry, hero of the Revolutionary War, is being laid in Franklin Park, Washington. Congress appropriated $50,000 for the monument four years ago.

The Senate September 29 confirmed the nomination of Henry Wade Rogers, of Connecticut, to be United States judge of the second district.

A report submitted to Secretary Garrison September 30 by the board of engineers appointed to investigate the floods that devastated the Ohio Valley last spring recommends immediate legislation to place under Federal control the construction of all bridges and their approaches and to prevent encroachments upon channels in tributaries of navigable rivers.

Negotiations with Colombia for the settlement of the differences between that country and the United States, arising out of the revolution of 1903, by which Panama became independent, are now in progress.

A subcommittee of the Senate Appropriations Committee decided September 27 to recognize the abolishing of the United States Commerce Court in practically the same terms as were contained in the deficiency appropriation bill recently passed by the House of Representatives.

FOREIGN.

The Chilean Government September 25 decided to participate on a reduced scale in the Panama-Pacific International Exposition at San Francisco in 1915, owing to the absolute necessity of diminishing its expenses.

France will spend more than $1,600,000 for aeroplanes during 1914, according to a semi-official announcement September 22.

China and Russia have reopened negotiations in relation to the conclusion of a treaty that provides for the recognition of the independence of a united Mongolia under the rule of the kutuktu or khan of Mongolia and subject to the suzerainty of China.

The race for the James Gordon Bennett cup at the Betheny aerodrome in France September 29 was won by Maurice Prevost, a Frenchman, flying in a Deperdussin machine in the record time of 59:49 for the distance of 124.27 miles, or at an average speed of 125 miles an hour, more than two miles a minute. Emile Vedrines and Gilbert, two other Frenchmen, were second and third respectively. Crombez, a Belgian, the only other competitor, finished last.

The British Government announced September 29 the dissolution of the Chinese loan agreement from which the United States withdrew its support some time ago. The agreement had not worked to the satisfaction of any of the five powers concerned, Great Britain, France, Germany, Russia and Japan.

Sir Thomas Vansittart Bowater was elected lord mayor of the city of London September 29. He will assume office November 9.

A number of huts believed to have been inhabited by shepherds before the foundation of Rome in 753 B. C. have been discovered by Commendatore Boni, director of the excavations in the forum and on the Palatine.

The widow of Count Tolstoi, the famous novelist, has published 656 of her late husband's letters to her. The letters begin with a proposal of marriage and cover the period of the betrothal of the count and countess and many years of wedded life.

Government returns printed September 29 show that 44,892 Bulgarians were killed in the two recent wars in the Balkans. Of this number 30,024 were killed in the war of the allies with Turkey and 14,868 in the war between Bulgaria and the Servians and Greeks. There were 104,586 Bulgarians wounded in the two wars and 7,824 reported missing.

Count Alvaro de Romanoes, Spanish premier, announced September 23 that Spain will participate in the Panama-Pacific International Exposition at San Francisco in 1915.

Sir Alfred East, president of the Royal Society of British Artists, died at London, England, September 28, at the age of 64 years. He was knighted in 1910 and received gold medals at London, Paris, Munich and Barcelona.

Prof. Eugene Oberhummer, of Vienna, president of the Imperial Austrian Geographical Society, is at the head of a committee that is preparing an Austrian antarctic expedition for work from Weddell Sea south in the Antarctic.

Announcement has been made of the betrothal of Princess Olga, third daughter of the Duke of Cumberland and sister of Prince Ernest, and Prince Moritz of Schaumburg-Lippe, youngest brother of Prince Adolph, the head of that house.

At a meeting of the diplomatic corps at Peking September 30 a vote favoring recognition of the Chinese Republic was taken. The general intention is to recognize the republic immediately after the election of the president.

Claude Graham-White is making serious preparation at London for an aeroplane flight across the Atlantic Ocean.

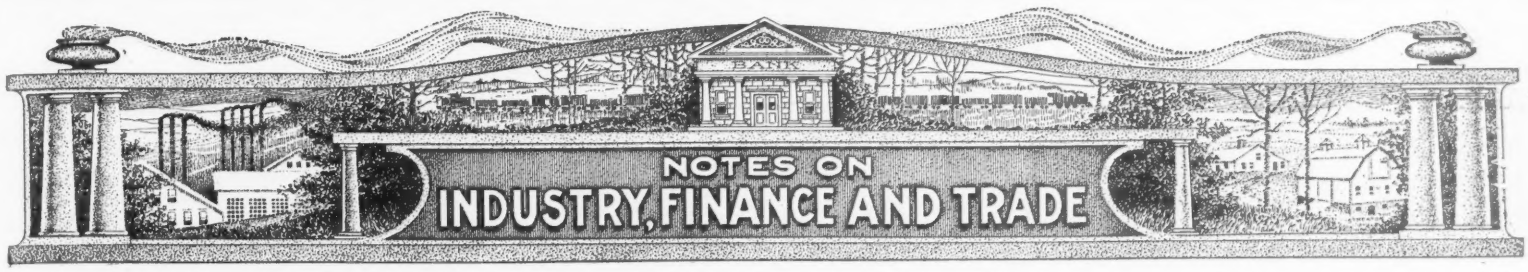
A treaty of peace between Turkey and Bulgaria was signed by the plenipotentiaries at Constantinople September 29.

General Chang Hsun, commander of the Chinese troops at Nanking, accompanied by a bodyguard of 50 cavalry, went to the Japanese consulate September 28 and apologized, in accordance with the Japanese demands in connection with the killing of several Japanese and an insult offered to the Japanese flag.

Santos Dumont, one of the pioneers in aviation, has constructed a monoplane on a new model, which was tested September 27 at Villacoublay, France, with excellent results. A peculiarity of the Santos Dumont monoplane is that the body hangs nearly three feet below a long single wing.

A cloudburst at Constantinople, Turkey, September 29 resulted in the worst flood ever known there. About 260 persons are reported to have lost their lives by the wooden houses they occupied being swept away by the flood.

An agreement has been reached by the Government and opposition parties of the new Chinese Republic, which have been deadlocked for a long time over the question of the presidential succession, for the immediate election of a president without awaiting the adoption of a new constitution. The election of Yuan Shi Kai as permanent president is expected to take place in time for the inauguration to be held October 10.



A noteworthy feature of the present financial and business situation is the greater confidence and cheer among the makers and handlers of commodities than among bakers and investors in surpluses. In fact, there is a large degree of optimism among merchants, manufacturers and transportation men, based on the outcome of the crops. Though the outturn of corn, oats, forage in the drouth stricken districts, potatoes, and other crops aggregates less than last year, it is figured out that money results from wheat and some other special crops will go far toward offsetting such losses on the other crops named as has been experienced. As to cotton, that important money crop over a large section of the South, though the total yield is not now expected to be as large as it was last year the demand on this season's crop has started off with something of a rush, the world's takings being considerably larger than at this time last year. The total visible is strikingly less than at a like time last year. The effect of demand on prices is seen in the fact that after two years the price is back again to the 14-cent per pound level. Thus returns to the growers will be good and add greatly to the liquid wealth of the South as well as to its purchasing power. The money value of this country's crops for the current year is variously placed at $8,500,000,000 to $9,000,000,000, and the conclusion is drawn that such a volume of new wealth can scarcely fail to stimulate general business into great activity, simply as the result of demand for consumption and the movement of farm products and their distribution. There of necessity must be a counter or reflex movement of merchandise into the farming districts under the effect of the sale of crops. But after all, so far as a high degree of activity is concerned, that is a matter of speculation and exchange, which is much under conditions over which producers have little or no control. Growers of grain and cotton can hold their products for a time for higher prices, but that is in fact speculating in futures, and does not conduce to activity while the holding is going on. Thus, taking the country and all kinds of business at large, free marketing and a movement on a large and general scale are better for credit and trade than any holding for higher prices.

* * *

While manufacturers and merchants count on crop results and the demand for commodities and manufactured goods that will be stimulated by the turning of soil products into money, and report a considerable rise in trade, the bankers continue to be cautious about credits and the putting out of money, and investors are about equally wary of venturing into disposal of their surplus, unless the guaranties are of the best character. These conditions are apparently as pronounced now as they have been since the decline of confidence began last spring. Though the stock market for the last month or so has by fits and starts made a little ascent from the midsummer's low price level, and some bonds have had a better outlet than a few months ago, the market for securities continues to be far from brisk or strong, and will not be until a larger degree of confidence than now prevails shall supervene. The results of tariff changes are generally accepted as a potential uncertainty, though there is much talk about it having been largely discounted in advance. But nobody believes that a radical change in the tariff can come in without some disturbance to business in the process of readjustment. A like conclusion pertains to the consideration and forecast concerning the proposed national banking and currency law. There is so much potential change in the attempted banking and revenue features, as affecting general business and finance, that one can not wonder that conservatism and caution prevail among bankers and investors. Yet the merchants and most manufacturers realize that the people have wants that must be supplied, and that they will not forego their gratification if they possibly can get the money to pay for the goods. In process of time the money that the farmers, salary and wage earners pay back to the merchants and manufacturers will be realized and actively felt by the bankers, and then there will be some stimulus to enterprise and a gradual rise toward prosperity. This will be the natural course, though the effects of national legislation on banking, currency and the tariff will remain unknown quantities until they have been tried out in actual practice. In the meantime about all the ordinary business man can do is to gather in all the trade he can, keep a close reefed sail on his credits, and await the movement of the cycle that eventually will bring around another period of prosperity. That may be in six months, a year, or more, according to how legislative and international affairs shall work out.

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Up to the beginning of this week about $24,000,000 of Treasury money of the $50,000,000 or more that Secretary McAdoo planned to put out for the movement of the crops had actually been forwarded to applying banks, while the movement seemed to have measurably paused for lack of demand. In New York a chuckle is going around because, as is alleged, more than half of the McAdoo funds has found its way to the banks of that financial center; which shows, remarks one organ of financial thought, that "while it is possible to earmark gold the Treasury can not earmark credit." It is even assumed that the crops so far moved by the Treasury offerings have been those of Canada, since New York has been shipping gold to the banks of Montreal and other points, perhaps because the general money market has been made easier by the distribution of Treasury money, and the New York banks thus have had less cause to hoard their gold than they would have had had Mr. McAdoo's offer never been made. Claim is also made in New York that the Treasury money sent South to finance the cotton crop movement has been used to hold cotton at home for a rise, a condition that accounts for a lack of the expected number of cotton bills in the metropolitan market for the staple. In fact, the McAdoo plan does not seem to have worked out exactly as was intended. The Middle West has not needed much Treasury money to move the crops and there has been no special urgency for Government help from anywhere north of the Ohio or west of the Mississippi River. Holding of grain for a better market doubtless has been a factor, and the local banks seem to have been able to take care of that matter. Viewed from an unprejudiced standpoint, the McAdoo crop moving proposition appears to have been a grand stand play for the beneficial effect it would have on the administration's policy of decentralizing at New York and other surplus centers the money control of the country; though, on the other hand, it might be regarded as a reasonable experiment as showing that there could be such a thing as having money enough, under Government control, to move the crops without resort to the funds held for that purpose by the New York and other central reserve cities, of course at stiff interest rates.

* * *

Whatever may be the thought and comment concerning the McAdoo attempt to move the crops with Treasury funds, the offer, and such disbursements as have taken place, are generally admitted to have distinctly caused a degree of ease in the money market, though interest rates have not appreciably declined. It is simply easier to get money to move the crops than it was before the Treasury could be relied on for a supply, and to that extent a squeeze has been avoided and all business men feel easier on that account. Of course this also has an easing effect on credits, discounts, extensions etc. But it in no degree has caused the bankers to be less careful to see that there shall be no undue expansion, for they feel that they are not out of the woods, nor will be until a test has been made of the two administration measures—tariff and currency.

* * *

Marked changes in Germany's finances have occurred in the last two years. C. W. Barton, writing for the *Wall Street Journal*, says that within two years Germany has paid bills to France amounting to $700,000,000, $200,000,000 to England and $200,000,000 to Russia. Now Germany owes practically nothing abroad. Comparing the state of the industries in the United States with those in Germany, while this country continues to push production to the utmost against labor exactions, the high cost of living and the financial cautions that the bankers are sending forth, the German manufacturers, under the admonitions of Government and the banks, are slowing down; in that country the injunction is: "Slow down; let us build up our gold reserves; it is necessary for the protection of the country as well as for industry; it is sound policy for the army and sound policy for finance." But, says our authority, Germany refuses to slow down, despite the increasing demands of labor, to which capital is conceding inch by inch. It is remarkable to contemplate that despite labor, the other costs of doing business, the exactitudes of the new laws about protections and safeguards in industrial plants, and the numerous other increased costs of manufacturing in all civilized countries, the manufactories continue to increase their outputs and enlarge their capacities and capital. Yet in Germany, and to some extent in other countries, the caution is continually going forth to go slowly, restrict operations to a degree of safety, and thus await a period of more favorable conditions. As respects Germany, under the encouragement and aid of Government manufacturers have a method of meeting strike conditions by shutdowns, aided by coöperation from other manufacturers in the same line, which seems to have a powerful influence in keeping labor and capital from destructive warfare. The producers simply quit when they can not profitably continue under the effect of labor demands, and resume when conditions make a favorable turn.

* * *

Those interested in cotton manufacturing and marketing well know that Egyptian cotton is a highly desirable product, as it is adapted to admixture in manufacturing certain kinds of fabrics on account of its fine quality. In this country attempts have been made to habituate it to our climate and soil. But Egyptian cotton requires a dry climate, which renders it adapted to soils that must be irrigated artificially. Efforts have been made to grow that kind of cotton in the arid regions of Arizona, and with some success. This has been done through the agency of the Department of Agriculture. After years of experimenting a variety has been developed and acclimated in Arizona. A considerable amount was raised last year, which averaged almost a bale to the acre, and the Department reports that in case the growers made proper effort 700 pounds of lint to the acre resulted. The average production in the United States last year was 190.9 pounds the acre; and so it seems that the Arizona results are very satisfactory, and the staple was considered as equal to the best Egyptian product. One company will plant 1,000 acres and erect a ginnery at a cost of $15,000. The climatic conditions are pronounced to be all in favor of the crop, as the growing season is long and favorable to picking. Japanese merchants are also said to have bought up some of this cotton last year, and to have agents looking over this season's growing crop. The Japanese are seeking the best cotton that can be procured for their growing manufacture, and since our Southwestern States are nearer to Japan than Egypt manufacturers can be assured a competitive buyer for Arizona raised Egyptian cotton.

* * *

The gross operating revenue of American railroads in the fiscal year ended with June 30 last established a new high mark of $3,171,445,000, as ascertained by the Bureau of Railway News and Statistics, of Chicago. This roundly is $295,000,000, or nearly 10 percent, greater than in 1911-12. At the same time operating expenses increased in a slightly higher ratio than did the operating revenue, though a slightly higher percentage was saved over expenses. There has been a marked expansion in railroad construction since 1906-07, trackage having increased from 327,075 miles to about 375,000 miles, which means an additional investment of nearly $2,000,000,000, which was raised in a generally unfavorable security market. This means an additional interest payment of $100,000,000. Hence the net income shows a gain of only $82,000,000.

* * *

Early in the week statement was made that about $1,000,000 a day was required for payment on wheat receipts at Duluth, Minneapolis and Chicago. Heavy deliveries from the spring wheat country were taxing the equipment resources of railroads and steamships to their utmost. Following the breakdown of their autumn trade in 1911 the shippers are said to have begun to utilize American facilities at points on the upper lakes to a much greater extent than theretofore, and this season is expected to see a much greater use of American elevators by Canadian shippers than formerly.

* * *

During September receipts of sheep at midwestern market points exceeded those of September of last year by 100,000 head, the record showing 685,765. At Omaha there was a deluge of sheep during last month. The most of the receipts were from Idaho, Wyoming, Montana, Washington, Nevada and Utah, showing that the western mountain States are the great resource for mutton. The aggregate value of sheep and lambs marketed at Chicago during the last week of September was $750,000. The great rush of cattle and sheep to market during September shows that in the most adverse season there are plenty of meat quadrupeds; but this year some feeding will have to be done, with a short corn crop to do it on. Result: plenty of lean meat, much of it mighty tough.

* * *

Speaking of the meat supply, the president of the American Meat Packers' Association said recently that, according to the Government figures, in 1907 there was about one head of cattle for each man, woman and child in the United States. At the beginning of the current year there was only six-tenths of one head of cattle per capita, showing an alarming comparative decrease of 40 percent in the cattle supply in six years. Melain T. Taylor, vice president of the National Stock Yards Bank of Illinois, says that the census of 1910 disclosed a population increase for the decade of approximately 16,000,000 persons, or 21 percent, of which more than 11,000,000 were in cities and towns having a population more than 2,500. Thus is seen that urban population increased 3 to 1 as compared with the rural increase; that is, there were three consumers to one producer in the increases.

* * *

In the Pittsburgh district builders of heavy rolling mill machinery are enjoying excellent conditions. Some of the large foundry interests have enough orders on hand to assure activity for several months. At Chicago machinery trade continues irregular. Apparently September will not show much improvement. Power plant machinery is doing better than other kinds of machinery. In Cleveland there has practically been no recent change in the steel trade. In Cincinnati several plants are adding to their equipment. September business compared favorably with that of August. In the New York district the machinery market lately has shown some improvement.

ACTIVITIES OF MOMENT AT THE NATIONAL CAPITAL.

To Investigate South American Trade Opportunities — Fate of Commerce Court Rests with President Wilson — Compilation of Forest Products Statistics May Be Abandoned.

A DANGEROUS PROVISION.

[Special telegram to AMERICAN LUMBERMAN.]

WASHINGTON, D. C., Oct. 2.—The report of the Senate Committee on Appropriations, made today, contains a joker in the provision to abolish the United States Commerce Court. The House bill provided that no preliminary injunction would be issued against an order of the Interstate Commerce Commission except after a hearing by three judges and five days' notice to the commission and the attorney general. The Senate Committee has inserted a provision practically nullifying that, and allowing the railroads to get an injunction from any Federal district or circuit judge who can be convinced that "irreparable loss or damage to complainant would result unless a temporary restraining order is issued." After getting such a restraining order the railroad company, under the Senate provision, could let the suit drag on for many years, for although the bill says that the hearing must be expedited, there is no provision for setting aside the temporary injunction in case the matter is not brought to a final hearing.

SOUTH AMERICAN COMMERCE TO BE EXPLOITED.

[By ODELL.]

WASHINGTON, D. C., Sept. 30.—For the purpose of making available to the business men of the United States the most up-to-date information obtainable as to opportunities for South American trade, following the opening of the Panama Canal, Secretary of Commerce Redfield will put into the field immediately two special agents. His action in this matter is the result of a suggestion made by a committee of the Chamber of Commerce of the United States, which was appointed for the purpose of studying the methods of the Department of Commerce with a view to suggesting how its field of usefulness could be enlarged. One of the special agents will report particularly upon the banking and credit situation of the South American countries and the other will devote his attention to trade opportunities in general.

The committee found itself in hearty accord with the secretary's general program for the development of the Department of Commerce and for making its facilities more available to the business men of the country. In the discussion it was made clear that the United States should follow some of the customs of foreign Governments in the stimulation of trade. It was asserted that Germany maintains in this country at least 1,200 men who are students of matters of commerce and who report back to Germany. What Germany and the other countries are doing was made the basis for asserting that the United States has only recently become awakened to the necessity for developing its export trade. It was agreed that the Department of Commerce must be so organized as to lead to a definite increase in the percentage of exported manufactured goods. The point was made that in spite of the great increases of exports, the United States does not yet send out of the country more than 5 percent of all its manufactured goods.

Conference Report on Tariff.

The conference report on the tariff bill was delivered to the House and Senate on Monday, and was considered in the House Tuesday, and in the Senate Wednesday. The expectation at this writing is that it will be accepted by both branches of Congress before Saturday and will go to the President for his approval. The bill provides that it shall become effective, except as to the sugar and wool reductions, immediately after its approval by the President. If no hitch occurs it will be the revenue law of the land not later than October 6. It is estimated that in this country, in bonded warehouses and under bond in cars and ships, is nearly $100,000,000 worth of imported merchandise, which is being held until the new duties go into effect. The loss in revenue on this merchandise, according to Treasury figures, will be about $10,000,000.

The following shows the wood changes in Schedule D made by the Senate from the original House bill:

	House.	*Senate.*	*Conference.*
Wood unmanufactured, not specially provided for	15%	free	free
Wood, comprising the sides, tops, and bottoms of fruit boxes exported as fruit-box shooks, and reimported filled with fruit	7½%	free	free

President Wilson has been advised from day to day about the principle changes in the bill made by the conference committee. In speaking of the conference committee it must be remembered that reference is made to the democratic conferees, for the Republican and Progressive members were not called into the conference until Monday morning and then they were given seven minutes in which to consider what the Democrats had done and vote on the report. But, with full knowledge before hand as to what the conference bill contains, it is not expected that the President will delay putting his signature to the enrolled bill any longer than it takes to do the deed.

In the income tax provision the conferees agreed to the Senate provision fixing the minimum income exempt from taxation at $3,000, with $1,000 addition for married persons living together, but there is no exemption for children, as was originally provided in the Senate amendment. The House provision prescribing the collection of the income tax at its source as to individuals has been modified to the extent that this method of collection shall become effective November 1, 1913. That means that after that date the employer must deduct from the salary of persons liable to an income tax the amount of the tax, which shall be paid directly by the employer to the internal revenue collector.

The House provision requiring an individual taxpayer to make affidavit in support of claim for exemption where his tax is withheld at the source is modified so as to permit such claims to be made by a signed written notice, with a penalty for any misrepresentation.

The House provision which exempted from tax, labor, agricultural or horticultural organizations, mutual savings banks and fraternal benefit societies, is extended to business leagues, chambers of commerce, boards of trade, not organized for profit, and to civic organizations operated exclusively for the promotion of social welfare.

The House provision limiting deductions by corporations of interest paid on indebtedness to an amount not exceeding their paidup capital stock, is extended so as to permit such deductions to the amount of such interest paid not exceeding one-half of the sum of the interest-bearing indebtedness of the corporation and the paid-up capital stock.

The House provision imposing the income tax on corporations for the year 1913, is modified in that the existing law is continued in lieu thereof until March 1, 1913.

News has come to the State Department that the Chilean Congress has adjourned without passing the pending bill to increase the tariff on lumber. The proposed action would have seriously affected the lumber exports from the United States, particularly from Washington and Oregon, and it has caused considerable uneasiness in Washington, in spite of the fact that there was nothing in the proposed law that could be construed as an attempt to discriminate against the lumber exporters of the United States.

Free entry of wood pulp and paper has been granted by the Treasury Department to Belgium and Denmark under the favored nations clause of their treaties. The action follows the principle of the Customs Court decision granting to European countries free entry for their wood pulp and paper because of the like privilege accorded to Canada.

COMMERCE COURT'S DESTINY IN HANDS OF PRESIDENT.

WASHINGTON, D. C., Sept. 30.—Ignoring the request of Attorney General McReynolds, and disregarding the protests of the shippers, the Democratic members of the subcommittee of the Senate Committee on Appropriations have recommended the abolishing of the Commerce Court on practically the same terms as incorporated in the House version of the urgent deficiency appropriations bill. There is practically no hope now of saving the court unless President Wilson interferes. There may be a fight for it on the floor of the Senate, but that is almost foredoomed to be a fruitless effort by the action of the committee, whose recommendations, under the present system of legislation, will be observed by all members of the majority party.

The demand of hundreds of thousands of shippers in the country, voiced through hundreds of traffic leagues, boards of trade, chambers of commerce, shippers' associations and other commercial bodies, that the Commerce Court be continued and that the shippers be given a day in court, the same as the railroads, was flippantly ignored. Even the earnest request made Friday by Senator Walsh, of Montana, that orderly and parliamentary methods be adopted in considering the Commerce Court case, was disregarded.

Senator Walsh protested against the use of a rider to an appropriation bill as a means of wiping the court out of existence. He urged that the matter be first considered by the Judiciary Committee, which has jurisdiction on matters connected with the judicial system, but even this reasonable request had no effect upon the subcommittee.

The committee did make a pretense of considering the matter. Hearings were had and many persons appeared before it. Not one single individual or interest appeared before the committee to advocate the abolition of the court. On the contrary, all the testimony taken by the committee at this time or that has been taken by the House committees, since the agitation against the court began, has been in its favor. The nearest approach to evidence against the court was the admission by railroad attorneys that they had no objection to trying railroad cases in the eighty-seven Federal district courts instead of in one central court at Washington.

Attorney General McReynolds appeared before the committee and vigorously opposed the abolishment of the court. He took the view that the Commerce Court is an important and essential factor in the Federal judiciary system, and that Congress should not be led into voting against it by misapprehension or prejudice. Not only did he oppose the abolishment of the court, but he also advocated an amplification of its powers. He explained that the Supreme Court docket is overloaded and declared that a certain class of cases should be assigned to the Commerce Court for final adjudication. This proposed transfer of jurisdiction, he said, has the sanction of the Supreme Court.

Representative Broussard, Senator-elect from Louisiana, whose fight for the retention of the court before the House was futile, renewed his attack upon the House provision to wipe out the court before the Senate committee. He explained how the proposition was railroaded through the House in the form of a rider, "a vicious legislative practice which has been denounced time and time again by public men," he said. The Senator-elect earnestly contended that the Democratic party would be taking a reactionary step which it would regret if it scorned the appeals repeatedly made by shippers that Congress should preserve the Commerce Court so as to protect their interests against the railroads.

Quite unexpectedly, but fortunately for the shippers, a special pleader for their cause, Luther P. Walter, of Chicago, happened to be in Washington and went before the committee. Mr. Walter has been counsel for many shippers' organizations and has had an extensive practice in litigation for the shippers against the railroads, both before the Commerce Court since its establishment and before that in the district courts. He pointed out that the rider in the deficiency bill had apparently been designed to benefit the railroads rather than the shippers, even though it was not entirely satisfactory to the railroads themselves.

Mr. Walter declared that the confusion and delays in cases brought by shippers against the railroads which existed prior to the creation of the Commerce Court would again result to the disadvantage of the shippers and to the advantage of the railroads. He asserted that the shippers, though they have been clamoring for a long time for a full and fair hearing before the proper committees of Congress, had actually been denied their day in court, and he concluded with an earnest appeal against retrogressive action which would again place the shippers in the disadvantageous position from which they were emancipated when the Commerce Court act was passed.

Francis B. James, representing the National Industrial Traffic League, which has a membership representative of more than 100,000 shippers, directed the committee's attention to the fact that the organization which he represented had at a meeting in Buffalo, last May, unanimously passed a resolution in favor of the continuance of the Commerce Court and an amplification of its jurisdiction so as to give the shippers rights which heretofore they never have enjoyed, but which Congress has given to the railroads.

Mr. James stated that after the first batch of decisions of the Commerce Court some sentiment developed against the tribunal, but such prejudice, he said, has entirely disappeared because the shippers discovered that a central court was vitally needed in order to secure a uniformity of decisions and particularly to expedite hearings of cases. He also pointed out that that which happened before the creation of the Commerce Court would follow its abolition; namely, that jurisdiction in railroad cases would be scattered among eighty odd district courts and the railroads would have it in their power to select their own court, to the great inconvenience and expense of shippers, and causing long delays in the disposition of cases. In most cases, he said, this delay would be beyond the life of an order of the Interstate Commerce Commission, which is two years.

Senator Walsh and the members of the subcommittee had a long and interesting discussion upon the question of the constitutionality of abolishing the judges of the Commerce Court in the event that tribunal should be discontinued, but were unable to reach any conclusion on that subject.

The provision adopted by the House and concurred in by the members of the Senate committee abolishes the Commerce Court on December 31, and legislates the judges out as officials as well as destroys the entire tribunal.

MAY ABANDON FOREST PRODUCTS STATISTICS.

WASHINGTON, D. C., Sept. 24.—There is a well founded rumor in circulation in official circles that the new director of the Census, William J. Harris, will soon issue an order for the abandonment of all work in connection with the compilation of annual statistics of forest products. The Census Bureau has been compiling these statistics for a number of years, but their publication has been so long deferred that they have been practically useless. That, however, is not the reason for the present determination to abandon the further compilation of these statistics, but rather because the committee which was recently appointed to reorganize the bureau, has reported that there seems to be no authority in law for an annual inquiry of this character, which the records show has cost from $20,000 to $40,000 a year.

The work of the thirteenth census is so far behind, that this committee has recommended curtailment in every possible place, and the Secretary of Commerce has been asked to get from President Wilson an order on the Public Printer to give precedence so far as possible to the remaining publications of the Census and the annual report, which is long overdue.

TRANSPORTATION NEWS INTERESTING LUMBERMEN.

Wooden Versus Steel Coach Argument—Tariff Advance and Suspensions Ordered; Increases Under Investigation—Sash and Door Rate Problem in Minnesota—Rate Hearing at Louisville.

ACCIDENT STATISTICS ON WOOD COACH VERSUS STEEL COACH CONTROVERSY.

[By Odell.]

WASHINGTON, D. C., Sept. 30.—Five years ago the steel passenger coach was almost unknown. Its adoption by the railroads has been more and more general each year since then until some of the roads have attempted recently to make it their standard equipment. It would seem, therefore, that if there is any virtue in the claim being put forth by the Interstate Commerce Commission and others that the use of the steel passenger coach adds to the safety of travel it would be reflected in the accident statistics of the commission. A study of the figures of killed and injured in passenger train wrecks during the last five years show no such decline as one would expect to find if the contention regarding the steel coach was correct.

As was pointed out in these dispatches last week the statistics of the commission absolutely fail to take into account the kind of equipment. There is a wealth of detail as to the various kinds of accidents, such as collisions, derailments, boiler explosions, accidents occurring to persons walking on the tracks and to employees in the discharge of their duties, but nowhere is there any reference to the fact that the train was composed of steel or of wooden coaches, or of both, except in a few recent bulletins on special wrecks, and these figures are worthless for statistical purposes.

In reading the following figures, therefore, it must be assumed—and it is a fair assumption—that more steel cars have been involved in the accidents in the later years than in the earlier years.

It is unfortunate for the purposes of this compilation that no account can be taken of the number of trainmen killed and injured in wrecks, for the reason that the statistics of the commission do not differentiate between the trainmen on passenger and on freight trains, and it would not be fair to include the trainmen on freight trains in such a compilation, any more than it would be fair to take into account passengers riding on freight trains, for it is a matter of common knowledge that steel gondola cars have been in use longer than steel passenger coaches, and also that most freight trains are made up of a collection of both steel and wooden cars.

Consequently the following tables are confined to passenger train accidents and to the passengers only.

Killed and Injured for Nine-Year Period.

The following table gives the number of passengers killed and injured in train accidents from 1904 to 1912 inclusive:

PASSENGERS IN TRAIN ACCIDENTS.

Year—	*Killed.*	*Injured.*	Year—	*Killed.*	*Injured.*
1904	270	4,945	1909	131	5,865
1905	350	6,498	1910	217	7,516
1906	182	6,778	1911	142	6,722
1907	410	9,070	1912	139	6,995
1908	165	7,430			

Totals—killed, 2,006; injured, 61,819.

The next table shows the total number of collisions and derailments, the damage to cars, engines and roadway, and the number of killed and injured for all trains, freight and passenger, from 1906 to 1912 inclusive:

	1906	1907	1908
Collisions—			
Number	7,194	8,026	6,363
Loss	$5,319,758	$6,299,568	$4,635,199
Killed	604	776	414
Injured	7,014	9,541	7,712
Derailments—			
Number	6,261	7,432	6,671
Loss	$5,339,431	$6,556,134	$5,548,461
Killed	373	515	314
Injured	4,772	6,695	5,122

The following table is made up of figures on accidents to passengers traveling on passenger trains only, so far as it is possible to ascertain these facts from the published statistics of the commission, and they are shown for the years 1908 to 1912, inclusive:

1908	Killed	Injured
Collisions	69	2,852
Derailments	31	2,387
All Other	..	91
Totals	100	5,330
1909		
Collisions	70	3,630
Derailments	31	2,619
All Other	..	102
Totals	101	6,351
1910		
Collisions	47	2,964
Derailments	68	2,380
All Other	52	100
Totals	167	5,444
1911		
Collisions	52	3,851
Derailments	67	3,327
All Other	1	77
Totals	120	7,255
1912		
Collisions	120	3,840
Derailments	33	3,901
All Other	..	46
Totals	153	7,787

TOTALS FOR 5-YEAR PERIOD

	Killed	Injured
Collisions	358	17,137
Derailments	230	14,614
All Other	53	416
Totals	641	32,167

From these statistics it would appear to be conclusive that whereas in 1908 the use of steel passenger coaches was the exception, while in 1912 the use of that type of car had become quite general, nevertheless the casualties have increased steadily during the last five years, showing that the steel coach does not add to the safety of the traveling public nearly as much as is claimed for it. The cause is not hard to find in studying the figures contained in the accident bulletins of the commission, for a large number of the accidents are caused by defective track, and the tendency to heavier equipment, not only in the cars but in the locomotives as well, and the increased speed, have helped to increase the number of accidents from this cause, while the extension of the block signal system and other automatic safety devices has had a tendency to decrease the number of accidents due to carelessness or error on the part of the employees. Consequently, while the commission has been advocating the use of steel cars, its own figures would indicate that such equipment adds to the number of accidents and increases the casualties, and there are no figures available to show that the steel car has added one whit to the safety of travel.

MISCELLANEOUS INTERSTATE COMMERCE NEWS.

WASHINGTON, D. C., Sept. 30.—The commission has granted to the Louisville & Nashville the right to establish through rates on lumber, in carloads, except yellow pine, walnut, cherry and cedar, from all points on its line south of Decatur, Ala., except where through rates are now effective, to eastern and Virginia cities as provided in its tariff No. A-11549, constructed on the basis of 2 cents a hundred pounds higher than the rates concurrently in effect on yellow pine lumber from and to the same points, without observing the long-and-short-haul clause.

An order has been issued by the commission suspending until January 28, 1914, certain items published in the following tariffs, which were to be effective as indicated below: Atchison, Topeka & Santa Fe, supplement No. 1 to tariff No. 6103, effective October 10, 1913. F. W. Gomph, agent, supplements Nos. 15 and 16 to tariff No. 29, effective September 30, 1913. The suspended items contained proposed advances in rates applicable to the transportation of lumber from San Francisco and other points in California to points in Texas and New Mexico north of El Paso, located on the Chicago, Rock Island & El Paso railway and other lines. The present rate to most of these points is 40 cents, and the proposed rate is 50 cents. Advanced rates between points on the lines of the Southern Pacific in the same general territory, which were to become effective March 28 last, were suspended by a previous order.

SOUTHERN RATE INCREASES UNDER FIRE.

SHREVEPORT, LA., Sept. 29.—With Examiner Fred H. Esch, of the Interstate Commerce Commission presiding, a hearing on advances in lumber rates from Louisiana, Texas and Arkansas to points in Oklahoma, Missouri and eastern Kansas, principally Kansas, was held in the Federal Building at Shreveport Friday. The proceeding involves an increase in rate from 24 cents to 27½ cents a hundred pounds, from mills on connecting lines in the Southwestern States mentioned to stations on the Santa Fe Railroad. The Santa Fe made the advance, and the commission on complaint of the Kansas State Utility Commission, representing consumers and other interested parties, suspended the new rates. None of the local mills were represented at the hearing, but a number of mills in other sections had representation. The Santa Fe seemed to be of the opinion that it had a right to give mills on its own line lower rates than those on connections, but the lumber interests off the Santa Fe claimed this was discrimination, and that they had as much right to ship to Santa Fe points on the 24-cent rate as the Santa Fe mills had to ship to other lines on that rate.

1909	1910	1911	1912	Totals
4,411	5,861	5,605	5,483	42,943
$3,108,691	$4,629,279	$4,302,056	$4,330,206	$32,624,757
342	433	436	378	3,383
5,395	7,765	6,994	7,949	52,370
5,259	5,918	6,260	13,698	51,499
$4,371,512	$5,194,679	$5,549,724	$7,197,252	$39,757,193
264	340	349	394	2,549
4,165	4,814	4,799	7,147	37,214

POSTPONEMENT BY DEATH.

NEW ORLEANS, LA., Sept. 29.—The death last week of Henry B. Schrieber, New Orleans member of the Louisiana Railroad Commission, resulted in postponement of the hearing scheduled at Baton Rouge for September 24, on the proposal of the Texas & Pacific to advance the Alexandria-New Orleans rate from 7 to 9 cents. The case will probably be heard in October. It is being vigilantly watched by the lumber interests, who suspect that the Texas & Pacific, if the advance is sanctioned, may move at once for an adjustment upward of the rates from intermediate points.

LUMBER DOCKET OF THE COMMISSION.

OCTOBER 9.—Argument at Washington, D. C.:
I. & S. 242—Chicago switching charges.
6273—Pridham, R. W., vs. Southern Pacific et al.

OCTOBER 11.—Argument at Washington, D. C.:
I. & S. 202—Advances on lumber and other commodities from Oregon, Washington and other States to eastern points.

OCTOBER 13.—Argument at Washington, D. C.:
I. & S. 252—Kansas City & Memphis Railway Company rate cancellation.
I. & S. No. 252—Detroit switching charges.

OCTOBER 15.—Washington, D. C., before Commissioner Clements:
4844—In the matter of bills of lading.

OCTOBER 21.—Washington, D. C., before Special Examiner Rynder:
Fourth Section Application Nos. 603, 682 and 4475.

RATES ON SASH AND DOOR PRODUCTS.

The Minnesota Railroad Commission is considering the problem of rates on sash and door products, following a hearing on the subject September 26. The custom has been for a good many years to charge one cent a hundred as an arbitrary over the lumber rate for sash, doors and blinds, but the commodity rate law of 1907, which since the decision of the United States Supreme Court has governed shipments within the State, fixed one maximum rate for "lumber, lath, shingles, sash, doors and blinds," putting all without distinction into class 13. The rate runs to 10 cents a hundred for 150 miles, 11 cents for 200 miles, 12 cents for 270 miles and 13.2 cents for 400 miles. Railroad officials insisted that a differential ought to apply and a hearing was granted at which some of the sash and door men were represented, and the Northern Pine Manufacturers' Association was represented by B. G. Dahlberg, of St. Paul, traffic expert.

EXCESSIVE RATES CHARGED AGAINST MISSOURI ROADS.

ST. LOUIS, MO., Sept. 30.—Steps to force Missouri railroads to make their rates comply with a schedule that went into effect in July, as the result of a United States court upholding the State's right to establish rates for movement within its confines, was discussed thoroughly at a meeting of the Lumbermen's Exchange at the City Club, Friday noon, September 26. It developed that lumber shippers and receivers not only have been overcharged since the law went into effect, though having been upheld by the United States Supreme Court, but that they are still being overcharged through the refusal of the railroads to obey the law. These overcharges have been because of the refusal of the railroads to figure out their rates.

President F. H. Smith presided, and Secretary George McBlair explained the situation. In the course of his remarks he stated that "it has developed that shipments originating on one line and delivered to another road for final delivery to the consignee are being charged for by the railroads at excessive rates." After Secretary McBlair had thoroughly explained the situation there was a general discussion. Thus finally resulted in the appointment by President Smith of a committee of six, with power to act, to investigate and to handle the matter for the lumber and tie interests. This committee is composed of two manufacturers, two tie firms and two St. Louis yard dealers. H. A. Boeckeler is chairman. W. A. Anderson, C. L. Harrison, Robert W. Abeles, jr., W. L. Fristoe and Charles E. Thomas are the other members.

HEARING ON COMPLAINTS OF ADVANCES IN RATES.

LOUISVILLE, KY., Oct. 1.—Examiner Settle, of the Interstate Commerce Commission, on last Friday and Saturday heard evidence in the case of W. T. Brown & Sons Lumber Company et al. against the Louisville & Nashville Railroad. The complaint involves advances in lumber and log rates from points on the defendant road north of Decatur, Ala. Two concerns outside of Louisville joined five Louisville companies in the complaint, the two being the Fullerton-Powell Hardwood Lumber Company, of South Bend, Ind., which maintains a yard at Evansville, and Maley & Wertz, of Evansville, Ind. A number of interesting points were brought up at the hearing, chief among these being whether the tariff was invalidated by only five day's notice being given instead of the usual thirty.

John R. Walker, attorney for the complainants, took the position that the rules of the commission provided that the short notice may be given only in cases of reductions, whereas the tariff in point contained numerous advances. The defendant road, however, filed correspondence with the commission in which the tariff was accepted with the warning, however, that a full notice be given later. The chief defense of the carrier was that the greater number of changes in the tariff consisted of reductions instead of advances.

The defendant carrier was given until October 28 to file its brief and the complainants until November 14. The defendant has until October 14 to file its reply brief. The date of all arguments will be set later.

RURAL CENTERS MAY EXCEL CITIES IN ATTRACTIVENESS.

Sometimes country-bred young women and young men bewail the monotony of rural life, the absence of the park, the theater, the library, the art gallery and other facilities for entertainment and instruction, which, they have been led to believe, contribute so much to the happiness and contentment of the city resident.

Of course every modern city has all these institutions that are designed to cultivate and satisfy the finer instincts and stimulate the loftier sentiments of men and women. Nobody would have the temerity to advocate their abolishment nor even to undervalue them as civilizing influences. But one may be pardoned, perhaps, for suggesting that their utility lies more in the fact that they make life tolerable for those who must live in the city rather than making it attractive to rural residents who otherwise would not make the city their home.

City Life Artificial.

The truth is that all of these things, as well as substantially everything else that goes to make up life in the city, is artificial—man-made, and no city, therefore, does or can offer to the world's people what Nature herself spreads before the country resident who has eyes to see and ears to hear.

Facilities Not Utilized.

Moreover, experience has shown that, notwithstanding the fact that a city may provide the facilities for recreation, many thousands of its citizens will still be unable for one cause or another to avail themselves of those facilities.

For example, most people, even though they do not live in Chicago, know that that city through its entire length north and south is spread along the shores of Lake Michigan. Yet lately a representative of a charitable organization that gave an outing to 800 pupils from a single Chicago school learned that of the number 180 never had seen the lake. The school they attend is only a few miles from the lake, a distance that may be traversed by street car in a very short time and for only a 5-cent fare.

Hadn't Heard of Art Institute.

One teacher took twenty pupils from her school to visit the Art Institute on the lake front. Of that number eighteen said they never had heard of the Institute; they had not seen the lake, and eight of them did not know there was a lake at Chicago.

Chicago is less than 100 years old, she has probably the finest system of parks and playgrounds in the world; and yet the biggest problem the city now has to solve is that of relieving congestion, enforcing sanitary regulations and educating her people to a proper appreciation of their duties as citizens.

Community Organization Best.

Every city affords ample evidence of the fact that this work must be performed by means of organized community centers. The cry everywhere is for bigness, for consolidation. Hence many good citizens have advocated the consolidation of all city parks into a single organization under one management.

Yet—and here is the lesson for the small, independent rural community—experience has shown that to perform in an efficient manner the work that the numerous educational institutions are designed to perform, the people to be aided must be organized into small, local, self-contained units. In other words, a big city may provide its great parks, its playgrounds, its art institutes, its museums and its libraries, but to utilize them it must organize and deal with each small section of its population as practically an independent and separate entity.

Efficiency Final Test.

On this point the present superintendent of the playgrounds and sports of Chicago's south park system recently said:

"There is also another point in the matter of the consolidating of our parks in Chicago, and that is a serious investigation of the question as to whether or not there are not certain functions of society better performed by small municipal groups than large ones. We are very fond of saying that the home is the community of our social structure; that anything that would seriously interfere with the home seriously interferes with our nation."

WINTER'S OPPORTUNITIES.

You must not overlook nor neglect the special opportunities that winter affords for excellent work in community building in your home town.

Winter is the season when most farmers have abundant time to read, to attend lectures and to avail themselves of other means of instruction and entertainment.

Now is the time, therefore, to take steps for bringing the people of your community together frequently for social intercourse and for mutual improvement.

The community development club and all citizens interested in promoting the welfare of the community should look upon community development work not as a duty but as an opportunity for service of the most helpful and profitable kind.

Work that is especially appropriate for winter must be done soon or must be postponed for a whole year. Delay in community development certainly is dangerous, and many a community has found to its sorrow and heavy cost that when unorganized it is a most fertile field for the exploitation of outsiders. Whereas, a community that is united in interest and organized for development leaves no field uncultivated. Its people find at home everything to satisfy their needs, whether they be material, moral, educational or recreational.

You can not afford to delay organizing for community development.

Cost Not Prohibitive.

When a library, a park, an improved school or a similar public institution is proposed for the small rural community objection is made on the score of cost. The truth is, however, that the cost of these necessary public utilities is not greater per capita for those who actually pay for them in the country than it is in the city. The reason this is true is that in a large city hundreds of thousands of citizens are in dire poverty, possessing no taxable property. Consequently the burden for these improvements must and invariably does fall upon the comparatively small number of citizens who can pay. On the other hand, in the rural community the average citizen is better off financially, he has more taxable property than the city resident of the same class. Hence a tax for public improvement in a rural community is somewhat equally distributed among all citizens of the community, being a burden upon none.

Rural Facilities Used By All.

But this is not the only, nor even the greatest advantage that the rural community possesses. In the large city every taxpayer must contribute to the support of many public institutions that he can not hope to secure any direct benefit from owing to their nature or their distance from him. In the country community this is not true because all the beneficent influences of the institutions of civilization are exerted within a very small and circumscribed area. Their influences in the country are intensive, whereas in the city they are extensive.

In Reach of Every Community.

The fact is that no community is too small to have for itself and of its own all the educational and recreational facilities that the large city could have; provided, its citizens show the same public spirit and the same private generosity that characterize the citizens of the larger cities.

Unfortunately, however, too many rural communities are, like some of the congested centers of the cities, in need of external stimulus. They will not do for themselves what every self-respecting and independent community ought to do for itself. They not only are willing to accept, but they expect outsiders to give them, as a means of self-exploitation often, public institutions that they ought not to be able to accept without injury to their self-respect.

NEED OF DEVELOPMENT FORBIDS DELAY.

What is true of the individual man is true of the organized community. The things it gets at great cost and at much self-sacrifice are valuable in proportion to the self-denial that they represent. Whereas, the acceptance of a thing that the recipient is able to buy with his own funds betokens a miserliness that few individual men wish and that no community can afford to be guilty of.

SUCCESSFUL RURAL LIFE COMMITTEE.

Citizens of rural communities quite aware of local needs and shortcomings, and eager to find means of betterment, are often oppressed by a feeling of helpless uncertainty. Unwillingness to assert leadership in any reform scheme, inability to unite effectively, engender a fatal communal inertness. To such the case of Montgomery County, Maryland, adjoining the District of Columbia, should be full of meaning. In September, 1911, fifty-three interested citizens formed a Country Life Committee. The Committee was in earnest, for its first act was to determine upon a sociological survey "as a scientific basis for future work." For assistance it turned to the "Department of Church and Country Life" of the Presbyterian Church, which detailed two field investigators. Four months of work early in 1912, and the church issued a bulletin describing the county's topography, economic conditions, population, social mind, recreation and morals, education, religious conditions and social welfare. At this point the Government became interested, and taking up two of the topics in which its departments were concerned, has now issued another bulletin treating exhaustively of the social mind and education. The public-spirited citizens who started the survey have now every benefit of complete information, expert advice, and wide public interest.—New York *Evening Post.*

THIRD SUCCESSFUL PAGEANT.

Marlborough, N. Y., Sept. 26.—It is one thing to get up a street parade and field day, another to give meaning and educational value to a village fete. The second is what has been undertaken just now for the third time in the Old Home celebration of Marlborough, New York, and despite a dark day it has been put through with good cheer and success.

Marlborough is about the smallest incorporated village in the State, yet after counting out the people who promise and then turn up missing, those who will give advice—even good advice—but nothing else, and those who say, "It is a fine thing, go ahead," enough leaders, enough talent, and enough helpers and financial support have been found to do something of permanent worth to the community.

It was the morning of Old Home Day, and raining. The committee gathered at 10 o'clock and decided to go ahead with the program. The call to "fall in" went down the street and final work for the afternoon parade was again under way.

This year early local history was the theme of parade and pageant. The leaders believe it a better thing for a community to unite, organize, develop ideas and plans and learn by doing, than it is to be put into the hands of outside leaders and give a faultless show.

The morning rain kept most of the cars and some other good things out of the parade. Three yokes of oxen—the only ones east of the mountains—couldn't come in such weather, and the big auto truck with the Colonial Dames slipped in the mud and never reached the highway. The Dames paraded all the same. The oxen were for the "first settlers" section, which had been planned. The Henry Hudson float was simple and good. The "1776" float with women sewing a flag was effective. The people going to the peace celebration, 1783, though not all there, were fine. There were the parson, his wife and two children in a lumber wagon, in the greatest old costumes ever seen—the plunder of the oldest garrets in town. The schoolmaster was on horseback. An ancient strap-hung chaise carried two maiden ladies resurrected for the event, and their slave boy to drive.

The band of Mohawk Indians with their tepee drags and camp outfit was great. Just two good Indian costumes were hired, some fine beadwork loaned, the rest home-made. The blankets included two old red table cloths and were much better than hired finery.

The boys supplied Indian lore, the committee planned costumes, drilled them, painted their faces, and on Friday, as the manager said, "The devil was in them," and they seemed the greatest band of savages ever gotten up. But there was no farce or fooling about it. It was all serious playing. The girls led the horses, managed the stuff and could not be kept out of the parade, mud or no mud.

The Presbyterian church and Manse grounds were given for the day and probably not at all unhallowed by the village fete. The grounds could not be enclosed, but tags were sold at the entrance, for money must be had for expenses and to increase the free library fund begun by the first Old Home fete. The lecture room was filled with a fruit show of highest quality, this being a notable fruit district.

There were speaking and music and at 7 o'clock the historic scenes with about one hundred people in costume.

But the evening pageant report should begin with the rehearsals. Everybody knows how hard it is to get people to hang together. Most of those who neglected rehearsals were weeded out, but one scene with mostly older folks had to go without a rehearsal. Finally the groups stuck together all right. The mounted men were like eels, but did not fail when most needed.

The Indians and the first settlers could not be separated from their respective groups.

Six scenes were given, the Indians making camp, Henry Hudson trading with the Indians, first settlers and purchase of the land, alarm at the passing of the British fleet up the Hudson and departure of the farmers for the support of General Gates in the North, the peace celebration, 1783, and the return from the disbanded Continental army. The last scene ended with a stately minuet, danced by four couples, and the singing of "Auld Lang Syne."

So it is that the smaller communities, one by one, are taking up their task of giving a finer spirit of fellowship, coöperation and local pride—honest pride based on hard work and achievement—to American country life.

Lumber Has Kept Pace With Builders'

demands through all these years since the landing of the Pilgrims and in one respect has proven a savior for many homebuilders of moderate means in that the lumber of today is so perfectly manufactured that it requires scarcely any hand labor from the carpenter. This has aided in keeping down the cost of building. You'll understand this better if you will come in and see for yourself the smooth surface of our FINISH, CEILING, SIDING, CASING, BASE, MOULDING, ETC. The manufacturers of lumber surely deserve much praise for their enterprise and the care they take in shipping. We've kept pace with them, too, in the storing of our lumber and can insure you nice, bright, dry, clean stock. Let us prove it.

"There's No Place Like Home"

Name and Address

SAMPLE AD FROM QUARTERLY BULLETIN OF ADVERTISING SUGGESTIONS FURNISHED FREE TO *AMERICAN LUMBERMAN* SUBSCRIBERS. IF YOU ADVERTISE IN YOUR LOCAL PAPERS AND ARE NOT RECEIVING THESE BULLETINS, WRITE FOR THEM AT ONCE.

WELL, WHERE'LL YOU GO?

Are you thinking of "leaving the country"? Where'll you go? There are lots of places. Ohio, for example, is a State where corn rarely fails—and where last March floods did damage amounting to upwards of $400,000,000. That is more than the cost of all the drouths Oklahoma ever has had.

Perhaps you have read of California's beautiful groves of oranges and other tropical fruits; and of the graceful, waving palms, the salubrious climate, and the certainty of production under irrigation. But don't forget that in one night last spring a freeze did more damage than the drouths of 1901, 1911 and 1913 cost Oklahoma.

Maybe you're thinking of putting a cover on the wagon and hitting the trail back to your wife's folks in Kansas or Missouri. They don't want you, especially in Kansas, where they've been hauling water and shipping out their livestock because of the effects of drouth.

Or you may conclude that you'll go 'way back east to northeastern New York, where "the summers are not so hot and the grass is always green." Late in July, the blue grass pastures there were so dry that sparks from the locomotives set the grass on fire. Forget it!

Read the letters from Major and Blain Counties, western Oklahoma, in this issue. This, if ever, is certainly the time to stick, to stay, and to win your way out of your present difficulties.

The advertisements of Florida lands may look pretty and read well; but they tell nothing of the sand and the swamps and the grief which are the portion of the wanderers who never permanently light.

If I knew of a better place than Oklahoma, I'd be there. If I felt that the present condition of things in Oklahoma is an inevitable consequence of the soil and climate of the State, I'd leave right now. But I know of no better place and I likewise know that when in Oklahoma, we once learn to do the things that we know ought to be done, years of drouth will have lost their terrors. Stay with it!—Oklahoma *Farm Journal.*

STATE TO EDUCATE MERCHANTS.

Kansas City, Mo., Sept. 29.—The State of Kansas is taking another step in the work of community development. Its colleges are to have courses in store-keeping in order that business men in the small towns may learn the value of up-to-date methods and also may know how to install them. Governor Hodges, the lumberman governor of Kansas, and the board of administration which has control of the state's higher educational institutions have taken up the problem of a course of study designed to make the country store more attractive.

As this is the first course of the kind ever tried in the United States, the board is somewhat puzzled in working out the details. There are plenty of courses in advertising and straight business courses, but they do not exactly hit the mark the Kansas board is aiming at. Among the things to be taught are these:

Writing advertisements for country papers.
Decorating store windows.
Displaying goods to make interiors attractive.
The handling of customers.
Pushing certain lines of goods.
Points on buying.

There also will be regular business college work in bookkeeping, letter writing, figuring costs and profits and the like. The plan is to make the course one year.

J. H. YOST, Prest. & Gen'l Mgr.
P. L. YOST, Vice President.

L. H. PAULEY, Secretary.
J. R. YOST, Treasurer.

GENERAL OFFICE OF

THE J. H. YOST LUMBER CO.

723-724 FIRST NATIONAL BANK BUILDING

LINCOLN, NEBRASKA.

August 1, 1913.

American Lumberman,
431 South Dearborn St.,
Chicago, Ill.

Gentlemen:

Your press bulletins are very helpful, and we send your publicity articles to our various yards and have them used in their local papers. They are doing much in helping us build the communities in which we operate yards.

Please keep our name on your mailing list for these bulletins, and oblige

Yours truly,
J. H. YOST LUMBER CO.

REALM OF THE RETAILER.

Trade in a Rich Fruit Belt—Views Born of Half a Century's Experience—Ideas on Grades, Pocket Mills and Delivering—Retail Lumber Business in a Health Center.

IN A PROSPEROUS FRUIT BELT.

From Iowa to Michigan is something of a step, though not so much so in these days of modern transportation. Just to vary things I took a boat across the lake and got out of sight of a railroad train for once. I reckon the surface of Michigan has not been quiet since first the spirit of God moved upon the face of the waters, and the undue and unwonted motion of the good ship came near being too much for some of the passengers. One fat man in particular spread signals of distress early in the voyage, but he didn't seem to get much sympathy; in fact, a fat man rarely gets sympathy when he gets stomach ache. A sleek double chin will spoil the effect of pathetically drooping corners of a mouth as thoroughly as the appearance of a cop will break up a game of craps. So our circular friend in dumb misery drew his head down into the collar of his overcoat like a big turtle and did not emerge until we reached quiet water near the dock of Benton Harbor.

Benton Harbor is right in the prosperous fruit-raising part of Michigan and is smiling out loud with good yields and consequent prosperity. One of the natives remarked upon the possibility of a failure once in a while. "Sometimes a frost will come along and knock out the peach crop," he said, "but that doesn't happen very often, and when there is a good crop those fellows make so blankety blanked much money that they never quit grinning if they do lose out once in a while." One of the signs of the times to a pilgrim from the corn belt is the factories turning out basket material. Basket wood of various kinds, cut after the manner of veneer, is corded up in tiers and ricks fit to remind one of the popular idea of the bales of money in a retailer's vaults—like the corn Joseph gathered in Egypt, as the sand of the sea, until he left numbering. At least some people talk as though they thought the average retailer made so much money it puzzled him to shed it. I suppose all these baskets, to come back to the original subject, are used to pack the big Michigan peaches in. I dropped into a store and bought a whole nickel's worth of bronze pears and had to beg the man to stop putting them into the sack. He seemed determined to give me half a peck or so, and being Scotch I would have felt under obligation to eat all of them, which might have brought back the cholera morbus left out in Cheyenne. At one point, Kalamazoo I think it was, the train boy came in with huge bunches of celery corded up on his arm the way I used to carry sticks of wood in my youth and sold the lot to the passengers at a ridiculously low price. I mention these things to show that when it comes to raising things to eat Michigan does not take a back seat for California or any other little old place. So far I have met only one man who did not have a good word to say for the State, and I suspected him of having a mean disposition.

Lake Port Cargo Trade.

Although there is a considerable amount of shipping across the lake I found that cargo lumber is almost entirely a thing of the past in Benton Harbor. I think this statement will hold with practically all lake ports. Last year I visited some Ohio ports and found that only an odd dealer once in a while would get his boards by water. In the first place, so far as Benton Harbor is concerned, hemlock is not in favor as a building material and hemlock is about the only cargo lumber available. Then the timber is cut back from the water so far that it has to be loaded on cars to get it to the boats, and once on the cars why not haul it around on dry land instead of going to the trouble of putting it on a boat and taking it off at the other side? The extra labor involved more than offsets any advantage in rates. Lastly, cargo lumber is not planed, which is a cardinal sin in these days. Not many yards have machines to put the satin finish on the sticks they get in, and if lumber must be sent to a nearby mill and hauled back again the boats would have to haul for about nothing, flat, if they expected to do a thriving business with board retailers. This is not saying no hemlock is used, nor that none comes over the water, for the Preston yard, for example, used about 800,000 feet of hemlock last year, and some of that came across the lake. But this yard has a dock right behind the mill, and the planers are arranged for the rough boards to run through them with the least possible loss of motion.

HALF A CENTURY IN HARNESS.

The Preston yard is an interesting one, but nothing else about it is as interesting as Mr. Preston himself. He has grown gray in the business, and has worked at it nowhere except in this one town. When I was leaving Mr. Arbuckle hurried out and flagged me. "I just wanted to give you a little information I knew Mr. Preston wouldn't mention," he said. "He started his yard in St. Joseph in 1864, and has been selling lumber ever since." St. Joseph is the same town as Benton Harbor except that it is across the river, and the natives wanted a name of their own. The uninitiated would not notice that one town had quit and another begun unless informed of the fact. So Mr. Preston has nearly completed his fiftieth year in what is practically one place. He has traveled widely and talks well and no one is younger in spirit than he when it comes to keeping up with modern methods and machinery. While showing me through the planing mill he pointed with special pride at a machine and explained how a Chicago architect had designed a house to be built in the town and wanted the mill work done elsewhere because he wanted part of it done on this kind of a machine and did not suppose there was one outside a big city. Naturally it gave Mr. Preston large satisfaction to confront the fellow with the very machine in question.

"We make our own window sash and do our own glazing," Mr. Preston told me. "In these days people have ideas of their own and have money enough to be able to put them into practice. So the windows we have to build differ too widely for us to buy and keep them in stock, and it takes too long to order them from the mills. Then we run our own moldings. In the big mills a foreman will set a machine and start an ignorant fellow to feeding lumber into it. That is all right as long as the foreman watches, but after he is gone if something goes wrong the chances are the fellow will continue shoving stuff through. That spoiled material is shipped out and we have to take it. Well, our customers demand better stuff; in fact, they want all their interior finish sanded. And by sanding it and running it about as we need it for our trade we can turn out as nice, clean finish as you can find anywhere."

Passing a Good Thing Along.

"I noticed the contest for the best letters on retailing subjects," Mr. Preston said, "and it's a good thing. There are hundreds of ideas in use around the country that would be generally adopted if they were known. I was down in Mobile years ago and saw a young fellow

A Fat Man Rarely Gets Sympathy

cutting door wedges. I told him I didn't like watching him because I felt that he might cut a finger off any minute. The foreman came along and I told him I knew a way for cutting those wedges without danger. I showed him in a few minutes, and that method was adopted on the spot. The same is true of many other things around the mill and the yard, and that is why I like to see the American Lumberman making such persistent efforts to find and publish these ideas."

All the alleys in Mr. Preston's plant are planked. The street is paved in front, so the dust trouble that used to be serious is settled.

Poplar's Popularity.

For the first time in many moons I saw poplar bevel siding. The 4-inch is the favorite. People are not different when it comes to buying lumber from what they are in any of the other activities of life. Farmers in one part of the country want heavy horses to work in the fields; in another they will have nothing but the long-eared Missouri songster; in another they use gasoline tractors; in another they think tractors are nice but too expensive. So with boards; every locality has its preference, that often amounts to downright prejudice. Of course our own preference is the result of careful analysis of the question from all sides, though of course the other fellow's is rank bigotry. But whatever it is it may not be so bad after all. Each kind of wood gets its market and holds it as the stuff proves to be fitted to the conditions of climate and the kind of building done. And then, too, West Virginia ships her poplar to Michigan, and California ships her redwood to Ohio, and the poor, downtrodden railroads have something to do. All kinds of woods have their good points or they wouldn't continue to be used; and the man who is willing to pay the price for poplar gets one of the best sidings yet put on the market. I know of none better unless it be the old white pine, and when it comes to holding paint I am inclined to believe poplar to be without an equal. Just notice how the poplar bed of that old buggy of yours has held paint through exposure to mud and snow and freezing and sun during the last ten years.

DEMOCRACY IN LUMBERDOM.

B. M. Nowlen, also of Benton Harbor, is the type of lumbermen who get their special satisfaction out of actually shoving lumber. An old railroad official once said there were two ways for a young fellow to learn railroading, the kid glove course and the coal oil course. The kid glove man worked in the office, and the coal oil man swabbed engines. The second fellow's hands were stained with coal oil but he usually got further along than did his kid glove brother. In retailing lumber there seem to be the adding machine course and the sliver course. The successful man takes a little of both, but he usually begins with the slivers, takes supplementary work on the adding machine, and graduates to the inner office. But some vigorous men carry their offices under their hats and command their forces from the firing line. Mr. Nowlen is one of these latter. He knows exactly what is in his yard, what is going out, who is working, how much a man can be expected to do in a day, the quality of stock that goes out, and generally has first-hand information on every angle of the plant.

To hear Mr. Nowlen say that he is selling a high grade of material is interesting, because some of the brethern insist that in these days high grades are out of the question. "We have worked up a trade that demands good grades," Mr. Nowlen said, "by long years of handling that kind of material. Mr. Preston handles about the same grade as we do, and men who want the cheap stuff do not come to us. I don't think we make as large a margin as some of the men who handle the low quality, but there is more satisfaction in selling lumber that satisfies, to men who pay without question."

High Grades vs. Low Grades.

Of course all lumber yards compete more or less. Some things are much the same in quality and price however you take them. But the competition between a yard whose long suit is high quality and one whose talking point is low price is usually reduced to a minimum. I don't know that either is better than the other; they appeal to entirely different wants. They compete very little, for the same reason that a hardware dealer and a horse doctor do not compete. The one place where the similarity falls down is that the two lumbermen are prone to look with jealous eye upon each other, and the high grade man will knock the other fellow's quality and the low price man will point the finger of scandal at the first man's margins. In an exchange of pleasantries of this kind the low-price man usually seems to have the advantage; for verily dollars look big to all of us, and we are willing to believe when someone says we are being charged too much.

But his advantage is only momentary; for when a man tries to conceal his poor stuff by loud noise concerning the money he will save his customers his sorrows are begun. Chasing trade that way reminds me of the story told by an old Ohio pioneer about the way they used to catch the half-wild hogs at butchering time. He said they would find an old razorback out in the woods and chase him until the ball of mud on the end of his tail caught between a couple of saplings and held him fast. The money-saving board seller will find when he has caught his trade that he hasn't much but mud, and that the prize is thin and tough. He will catch the grasping, penny-squeezing, long-time-credit fellows who yowl at the sight of a bill like a tom cat at a bull pup. Understand that I am not saying this of the honest dealer who carries low grades and sells them for what they are. There are people who demand that stuff and every dealer carries some of it. I am talking about the fellow who tries to pass his poor stuff off as good material at low prices. Deception is very often its own punishment by attracting those of like feather who will have fun deceiving the deceiver.

Pocket Mills and Delivery Troubles.

Two things that Mr. Nowlen told me were very interesting. One was that his big shed is built after an American Lumberman plan, and the other is that he intends to install a pocket planer such as has been long advocated in this paper. I shall be interested to find out just how strong a hold the planing mill has on the retailing business in this State. The pocket planer is not always a panacea for planing mill ailments, for some good sized mills are making money and bringing in business. In that case it isn't an ill, some will say. But where it is a money-losing ill the big mill can't be supplanted by the pocket edition without other readjustments. It has to be applied with common sense. Some men get enthusiastic over the little shop and talk as though it would fix every trouble the big boss has, from collecting bad debts to keeping the drivers from getting drunk over Sunday. If the trade has been educated to odd-sized sash put together over night it will not be enough to put in the little shop. The customers will have to have some more education on the side. They will have to be taught to think of their stuff long enough before they're going to want it so that sash and doors may be gotten from the nearest big mill. But all this can be done if the money-losing mill man makes up his mind hard enough.

Benton Harbor has more or less trouble with delivery. "We have a motor truck of about 1,400 feet capacity," Mr. Nowlen remarked, "and when we send it out with

a load there are usually about five orders on it. You can see that we're more or less up against it. Every person who needs a little stuff must have it delivered. Every contractor when he sees he's going to need some little thing 'phones for it, and we have to deliver three or four jags at a job in half a day that might as well all go in one load."

The John Wallace Sons Company, across the river in St. Joseph, has its yard right down on the water front; but in spite of that fact it gets almost no cargo lumber. The brothers report a good business this year.

WHERE ORCHARDS AND DAIRIES ABOUND.

In order to reach Niles a person has to go right through the fruit belt, and he sees orchards in great numbers. When I made the trip most of the fruit was gone except winter apples and pears, but an opinion could be formed as to the amount that might have been raised. A certain amount of dairying is done in this section, for C. R. Smith, a dealer in the town, is president of a little creamery company that has been making money during a number of years. The dairy men are building silos, of which I was glad to hear; but they are building them of cement, which fact did not please me so much. I asked Mr. Smith about it, and he said the wooden silo had been tried, weighed in the balances and found wanting. The wooden fodder cans would begin to rot in half a dozen years. I still believe there must have been some morbid condition to make them so short-lived. Probably they were not kept painted or mayhap not painted at all. The LUMBERMAN is strong for the wooden silo and objects to having *Tekel* written after it, especially since it is not sure that the balance it was weighed in hadn't been tinkered with.

Mr. Smith has grown grizzled in the harness; that is, so far as his remaining crop of locks is concerned, but he's younger in spirit than a lot of college boys. In spite of current opinion to the contrary many college men take themselves so seriously that they are bowed down with gravity of their own manufacture. That has to be gotten over, like the chicken pox, and usually comes to every person whether he goes to college or not. And the fellow is lucky who gets over his attack with no ill effects. If Mr. Smith ever had it—he's a college man, too, by the way—he recovered just fine; and that's why I say he's young in spite of his bald top.

The Real Community Development Spirit.

"I've got one boy in Harvard Law School and another in Northwestern University," he remarked. "I like boys and I like schools and I think boys ought to have a chance as long as they behave and try to use their chances. I wouldn't take a lot for my college experience, and I made some of my best friends there. Why, here's a fellow up in the Northwest, homeliest critter you ever saw in your life, but he and I never did get over being good pals. He's making good in fine shape, and I'm glad."

Mr. Smith is a public spirited man, and I could have guessed it after I talked to him five minutes. There's a difference in public spiritedness. One fellow says: "Go to, now; public spirit is a good thing. We ought to have more of it. I'm naturally lazy and hate the idea of starting something, like sin; but I'll do it because I think I ought." He's a good fellow, and the community would be better for a lot of him. But then there is the other fellow who doesn't stop to figure out his duty. He just public spirits because it's in him and has to come out. He works because he finds it the best kind of fun, and does more work because he doesn't use up a lot of pep in figuring out that it's his duty. That's Mr. Smith's kind. He is the president of the commercial association and has been mixed up with about everything that has gone on in Niles since he has been on the job. While I was in the office he gave orders to have the creamery painted. "It's making us some money, and I like to keep things looking decent," he remarked.

IN A HEALTH CENTER.

Next I landed in the town of breakfast foods and recovering neurotics. Battle Creek has become so well known for its big sanitarium and the output of the Post and Kellogg factories that other things that would make an ordinary town swell out its chest are passed unnoticed. Its experience parallels that of Iowa to a certain extent. The Hawkeye State has gotten so wide a reputation for hogs and corn that little things like famous novelists, poets, colleges, statesmen and so on are discarded as of comparatively little importance. Our foolish contemporaries insist that we approach the Hall of Fame and rap on the door with an ear of corn and a ring of sausage or else forever keep away. Battle Creek has factory after factory, employing thousands of men. Mr. Wells, partner in the Rathbun & Kraft Lumber & Coal Company, said that 7,000 dinner pails go to work every morning. The average wage paid, I was told, is more than $2.40 a day. That sounds pretty big, but I noticed in going around the town that there are no cheap houses. Cheap houses always go with cheap labor, and the reverse is also true. There are railroad shops, printing press factories, pump works, and so on down the list.

Art, Commerce and Health.

Perhaps the most interesting of all the things in the famous town is the plant that turns out postum, grape nuts, post toasties, and the other decorations for the inner man, invented by C. W. Post. On the grounds stands the little old house where the first start was made, in 1895, hardly big enough to be noticed if it got in the eye of the present plant. Verily the breakfast tables of the world have proved to be a gold mine, but they required a master miner to work them. The natives say the owner of the plant is making money so fast he doesn't know what to do with it, but that strains the credulity of an inkslinger. The average newspaper man doesn't believe there is that much money in the world, judging by the amount he sees of it. But Mr. Post without doubt is well padded with the perishing goods of this present world, and he seems to know what to do with some of it. His office building, the place where the advertising schemes of his products are wrought, looks like a metropolitan art gallery. There are paintings and marbles and bronzes and antiques in the place to the value of $300,000. How's that for a business office? There is a library table made of dozens of varieties of marble that was the property of one of the early popes, and a portrait by a medieval artist bought at the sale of art treasures formerly belonging to the famous Medici family. But the collection is democratic, for mixed among the old masters are the originals of pictures painted to advertise grape nuts and its compatriots.

Some of the art treasures have spilled over and are to be seen in the Post Tavern, which is said to be the finest hotel in the State. In the smoking room of the Tavern is a chest of drawers that used to belong to Abraham Lincoln. I wondered when I looked at it if the Great Emancipator kept his shirts in the second drawer and had to call Mrs. Lincoln to find his collar button where he had put it in a box at the back to be sure of finding it right away when he wanted it.

The sanitarium grows bigger and bigger and remains crowded all the time. This is one place in the world where children are welcome. The owner, having no children of his own, has raised forty-three; so the babies are as welcome as anybody and more welcome than most. All kinds of things are done for their entertainment. Just across the street from the big building is a little place where those souls who can not live by vegetables alone—the sanitarium serves glorious vegetarian fare, the kind that makes your hair curl—can get the lusty hamburger and the powerful steak. A Chicago newspaper man who came to the hospital for a rest wrote up this more or less noisome little place and named it the Little Red Onion, and the next day the owner had that name painted up. So the Little Red Onion stands facing the big sanitarium like Satan just outside the church door.

Retail Trade in a Live Town.

I have Mr. Wells, previously mentioned, to thank for the comprehensive view of the city that I got, for after

And the Powerful Steak

showing me through his own big yards he wound up his car and showed me the kingdoms of his municipality. Mr. Wells used to be a bank cashier, but when the time came that he wanted to make a step upward he naturally chose the lumber business for the crowning efforts of his life. Of course we don't say that out loud, because we don't want all the cashiers to quit, and then there are enough retailers as it is. Mr. Wells is president of the local board of education, and showed me with evident pride a number of school buildings. He said the city was spending $300,000 a year on its schools, which is the evident reason it has such good ones. An unusual part of their equipment is a library building containing 30,000 volumes. This is distinctly a school library.

But I started out to talk about lumber and not about the town, interesting though it is to me. The Rathbun & Kraft Lumber & Coal Company, of which concern Mr. Wells is a partner, has a big plant right in the heart of the city. It owns about four acres within half a block of the Post Tavern. Not every lumberyard has a $600,000 hotel as its next door neighbor. I would judge from other city values that the Rathbun & Kraft land would be worth $15,000 to $20,000 an acre. That's getting pretty high in price to pile boards on. The factory trade alone makes a nice item, even when no new buildings are put up, for benches and interior braces are continually wearing out and must be replaced. For this trade the yard keeps a large stock of heavy maple and beech 3-inch stock, which sells at a good profit. It is hard stuff to get and necessary for the purpose, so naturally the factory men expect to pay a fair margin on it. Hemlock is much used; it comes from Cadillac and Wisconsin.

"Our buildings are not what we wish they were," Mr. Wells remarked. "Notice our molding racks, for example. What we want is a place where we can store our finishing stuff on end." But even at that there are extensive sheds on those four acres. Most of the 3,000,000 feet carried in stock is under roof, which means a big area of roofing. The yard has a planing mill, but operated in an odd way. The company has a big engine with which it runs a planer, ripsaw, and cutoff, and then it rents a lot of machines and the necessary motive power to a contractor. This contractor has large space in the big brick building in which the office is located.

"It doesn't pay," Mr. Wells said. "Running these machines costs us close to $6,000 a year, and we have to sell a lot of extras to come out ahead of that. We could as well run these machines with individual motors, and that's what we would do if it were not for the machines we rent."

Local Customs and Woods.

The yard has some country trade, which almost always means cash trade. The common experience is that country trade is credit trade with the emphasis on the long wait. But in those places where farmers have the right idea and the money the credit man may look for a new job. A farmer is not different from other people. He enjoys coming into the office, pulling out a roll big enough to choke a cow, peeling off the amount he owes, and shoving the rest down in his overalls. We all like to appear flush. I remember a college kid who carried a couple of fifty-dollar bills carelessly in his vest pocket, when that was about all that stood between him and the wolf. I've also known a city man to carry $1,000 around with him that he didn't need, just for the pure joy of peeling a ten off to pay for a 40-cent luncheon. But the lumber dealer is very willing to humor this weakness when it issues in cash payments for lumber. He'd be willing to have a whole savings bank flashed on him to make that happen.

Poplar siding is the only stuff in Battle Creek. Mr. Wells said that formerly the company balled up with half-a-dozen kinds, but all the dealers got together and decided to carry only poplar. There is no organization in the town, but the lumbermen get together once in a while to talk about things. They make no hard and fast agreement, but it is wonderful what a lubricator a little friendly visit is. Men get to understand each other, and each finds the other an ordinary human being with like passions as himself.

The Battle Creek Lumber Company is having a pretty good year, though Mr. Baker, the manager, intimated that it could care for a few more sales. That is a pretty safe statement. I don't often find a manager who urges his customers not to buy anything until after he has had a chance to rest and get back his wind. I knew a couple of duck hunters once who went out in the times before the law got curious about the number of birds killed in a day. It happened that a sudden cold snap turned the birds back, and they just fell into the water in front of the blind where these shooters were. They shot until their shoulders felt the way an Englishman does when he sees Mrs. Pankhurst. They shot left handed and telegraphed for a wagon load of shells, but still the birds came. Finally they had to quit and go to a hospital to be nursed back to health and sanity, but as long as they live I reckon they'll never quit grieving that they couldn't kill all the birds that came. Such are the feelings of most retailers when it comes to a flood of orders; if one had to quit and let some go by he'd never be the same man again. Mr. Baker said the sale of asbestos shingles is increasing in spite of his efforts to keep cedar to the front.

OCEAN FREIGHT RATES.

Freight rates during last week remained practically the same as last quoted by Alfred H. Clement & Co., freight brokers and forwarding agents, of New Orleans, La.

Rates for prompt shipment are quoted as follows:

	Hardwood.	*Softwood.*	*Pine.*
Liverpool	30c	33c	100s
London	35c	37c	185s
Belfast	37c	40/44c	$14.00
Dublin	38c	41/45c	14.50
Glasgow	37c	40/44c	14.00
Havre	35c	40c	13.00
Bordeaux	45c	50c	120s
Antwerp	30c	35c	95s
Bremen	30c	33c	95s
Rotterdam	30c	35c	90s
Hamburg	35c	40c	$14.00
Hull	38c	41c	115s
Christiania	40c	45c	$16.00
Stavanger	40c	45c	16.00
Gotthenburg	40c	45c	16.00
Barcelona	40c	43c	16.00
Marseilles	38c	41c	15.50
Genoa	40c	43c	15.00
Naples	43c	45c	17.00
Venice	42c	45c	16.50
Trieste	40c	43c	16.00
Fiume	42c	45c	16.50
Baltic	50c	....	....
Buenos Aires	$19.00	$17.00	18.00
Algiers	42c	45c	16.50

ALLIANCE GATEWAY REOPENED.

SEATTLE, WASH., Sept. 27.—Effective today the old Alliance gateway, as it has always been known to lumber and shingle shippers, will be again opened to transit shippers. That is, shingles may be billed to transfer points and reconsigned to points beyond on the basis of the through rate before reaching destination. Or after for ten days they may remain on demurrage at the rate of $1 a day per car and be reconsigned on the basis of the through rate during that time. This privilege, which was in force for a number of years, was discontinued by the railroads December 24, 1910. The new tariffs of the railroads make no provision for the storage of shingles at Minnesota Transfer, Minn., and Aberdeen, S. Dak. This is in accord with the recent decision of the Interstate Commerce Commission, which held that the storage of shingles was not a function of the carriers. The railroads have taken advantage of this to discontinue a practice that was a burden to them and at the same time looked upon with much disfavor by a large percentage of the shingle manufacturers. Shingles may be stored, however, at several points east of the two points just mentioned on connecting lines.

RETAIL METHODS CONTEST.

Valuable Contributions in Congress of Ideas—Two Dealers Who Will Judge Papers.

G. F. FRANK, MISHAWAKA, IND.:
Frank Lumber & Coal Company.
A Judge in September Contest.

What have you devised in your yard to save money, labor or worry, or to overcome difficulty? *Write* THE AMERICAN LUMBERMAN *a letter and tell about it.*

For the most helpful idea or method described in the letters published in October Twenty Dollars will be paid.

For the next best letter Ten Dollars will be paid.

And for the third best Five Dollars.

These prizes will be awarded by a committee of retail lumberyard owners, who know a retailer's troubles and can spot a good idea when they see it.

The letters that win will be the letters that show a better way to do something that now constitutes a problem.

In addition to the three prizes mentioned above, THE AMERICAN LUMBERMAN will pay also for six other letters published during September $250 each. Write a letter *today*. Choose your own subject.

W. H. EDWARDS, MUSKEGON, MICH.:
Manager Edwards Lumber Company.
One of September Judges.

JUDICIOUS ADVERTISING.

COFFEYVILLE, KAN.

What have I devised in my yard to save money, labor and worry?

Outside of collections, advertising to get the best results is a proposition that requires a good deal of thought. A few years ago we added Can't Sag Gates to our stock, and when we sell a farmer a gate, in addition to the profit we make, we advertise our yard. On the top board we put the name of the farmer who bought the gate; on the second board from the top we put his rural route number and on the center board we put our own ad and location of our yard. During the last six months we have made hay racks, painted the racks and put our ad on them. We also advertise in our local papers.

We invite the farmers to make our yard their headquarters when in town. We have a place set off where they can tie or feed their teams and also get all the water they want (in Coffeyville the farmers can not tie their teams in the business part of town). When a farmer tells us that he does not like to accept our invitation because he has never traded with us we tell him to come; even though he does not trade with us he is welcome to the room and water for his team. When we get the farmer's good will we eventually get a part of his business.

A. M. HORSTICK, Local Manager,
T. H. Rogers Lumber Company.

PILING PANELS.

NEW YORK CITY.

I have an idea which will enable many lumbermen to meet a great difficulty. Many hardwood yards make up a full stock of poplar but mostly of wide panels. Many of these yards still have to handle these at a great risk of destroying them. Some yards have bins 10 feet high, and to think of piling these panels in these bins is no joke.

In our yard we keep a good stock of panels, and we have hit upon a good scheme to do away with all this trouble. We got one of the men to make up the articles according to our own ideas. We got a piece of wood about 7 feet long and about 1½ by 1½ inches thick. It is made of a piece of straight-grain mahogany and has lasted for over a year and a half. At the strongest end we put a strong nail in ready for the next move. Then we file the head of the nail down to a fine point. The idea of this stick is: When a large amount of panels are to be put away common sense will tell you that a man can not push away wide panels and still be on the ground and if he does scaffold them he has no possible way of getting at the stock which he is working at, as he must remember he is working on wide panels. To make this more clear we append herewith an illustration of the one we have in mind. We hope this will be of some convenience to other helpless yards.

ALOYSIUS T. GREY,
With the Jacob Bayer Lumber Company.

ADVERTISING AND COLLECTING.

BUTTE, NEB.

I find a good way to advertise is have your bins full of nicely piled lumber. Of course, it must be a good grade; knot holes and crooked stuff will not do. The poor grades should go to the kindling pile and be sold by the hundred pounds. Give your customer good service, a pleasant face and talk to him in his own language.

Figuring bills, I think, is something that every lumberman who considers the question seriously will say is not done correctly. A good way I find to figure a bill is to get your customer to agree on a certain percentage he is willing to pay you for handling the lumber, say from 10 to 15 percent above your cost. I know there are plenty of bills sold for less than 10 percent the other way.

I wrote an article on collections three years ago and am still convinced that the same idea is all O. K. now. When one sells a bill of lumber there are several ways to make a settlement. I ask a man to give me one-third down, another one-third when the lumber is on the place, the balance in 30 days or when the building is completed. I have two $1,000 bills sold only a short time ago; one on four months without interest and the other on four months without interest and 7 percent after that. These bills were sold at a 10 percent margin.

J. G. SCHEYER, Manager,
William Krotter Company.

KEEPING UP COLLECTIONS.

KNOXVILLE, TENN.

An important help in keeping up collections is to keep the accounts due constantly before the one having charge of that part of the business. Our plan has been of great value to us, and is very simple.

In taking off our trial balance the first of each month we list the amounts of balances owing us by customers, using adding machine, and making the list on right hand side of sheets of ordinary 8½x14 typewriter paper. After the balance is completed these sheets are put in typewriter and the folio entered on left and customer's name on line opposite the amount printed by adding machine. This gives us a list showing ledger page, customer's name, and amount owing, of every account on our books. We carry from 300 to 400 accounts, and the list can be filled in very quickly. This list is constantly on the desk of our secretary and treasurer. Memoranda are noted on it of dates of sending statements, personal calls, promises to pay, payments made, etc. It is the work of only a few minutes to glance over it and pick out any names that require attention, this being done in one-tenth of the time it would require to run through a ledger. A new list is made every month. This is the best thing we know of in our office that is different from the usual way of doing things.

CHAVANNES LUMBER COMPANY,
A. L. Chavannes, President.

The following is a memoranda sheet of the Chavannes Lumber Company, with the initials of customer instead of names:

301	Mrs. J. F. S....	$ .55	Paid	C	
	Dan Q.....	30.45		M	
	E. A. McC.....	25.25	Paid	M	
	T. F. H.....	3.10	Paid	C	
	J. H. B.....	89.44	$38.73		Terms on $64.60
	A. P. F.....	1.50	Paid	M	
302	Church	2.65	Paid	M	
	H. W. W.....	1.00	Paid		See J. S. R. 20th
	J. C. L.....	3.45			
303	F. A. McS.....	24.58		C	Will mail when done work 20th
	A. M. E.....	4.55			
304	H. L. S.....	15.75	Paid		Will call
305	F. C.....	4.95	Paid		
	F. A.....	34.66	$18.00		Will call
	J. Y.....	162.80			Not due
	P. J. C.....	6.00			Will call
306	T. G. B.....	13.90	Paid	M	
	T. E. J.....	53.50		C	Left statement
	C. S. T.....	3.10	Paid	M	
306	L. F. T.....	4.38		C	Left statement
	J. S. C.....	16.83	Paid		
	Chas. F.....	67.20	Paid	C	See about 16th See S. R. R. Sick
	J. M. S.....	24.09			
307	Mrs. A. L. F....	1.75	Paid	C	
	J. A. K.....	246.54	Paid	C	Look up about 15th
	Church	200.41			Will call
	A. S.....	52.45	$10.00		
	J. W. C.....	1.75	Paid	C	
	A. R. W.....	18.50	Paid		Will call
308	A. G. M.....	40.04		C	Will mail 5/10/13
	Jas. W.....	23.00	$10.00	C	Left statement
	W. I. T.....	6.05		C	
	Jack F.....	3.70	Paid		
	W. H. M.....	6.53	Paid		Will call
	Mrs. E. G.....	3.50		M	
309	R. J. H.....	8.00	Paid	C	
	R. S. C. H.....	3.40		M	
	C. E. G.....	6.15	Paid	M	
310	J. L. W.....	55.80			
	Mrs. S. W. J...	3.90	Paid	C	
	T. P. S.....	2.60	Paid	C	20th
	J. W. S.....	.55	Paid	C	
311	J. F. H.....	28.57	$20.50	C	Call back 4/15
	T. S. W.....	5.07	Paid	M	
	J. A. B.....	.75	Paid		
	A. B. D.....	406.79		M	Away this week 5/12
	W. B. C.....	307.06	$300.00	M	

MAKING COLLECTIONS.

BRADFORD, PA.

It is with a great deal of interest that we are reading the various letters in your Retail Methods Contest from the different dealers throughout the country. It helps us all to "get together," and we believe that there are no retail merchants in the country who need to get together more than do the retail lumbermen.

We have had many experiences in our business and plenty of competition but, as a rule, if we get a customer we usually try to keep him, more especially if he pays his bills. We feel that we would far rather have one man on our books who pays his bills than ten who take their time about it. In such a case we are ready and willing to meet any or all prices that this good customer gets from anyone who is responsible. We lose a good customer occasionally, but it is our experience in this vicinity that he usually comes back. Right at this time a house is being built in this city the material for which was all purchased in your city. Furthermore this man has always bought his material from us. We did not realize, however, that he intended to send to Chicago for his bill or we would, we can assure you, have kept it here. The writer met him on the street recently and had a long talk with him and told him that we would have met anything that he got in the way of prices there. We understand now that he is having considerable trouble trying to make the material he purchased fit the house or picture of the house he bought. In a recent issue of your paper you had a very good article on buying material at home; not only building material, but all kinds, and we took the liberty of cutting this page out and mailing it to the above-mentioned man after marking the article "Food for Thought" and underscoring several lines that were especially good. We do not think that he will send away for another bill.

We find that the biggest problem in our business is our collections. Although we try as hard as we can to keep them down as low as possible, it is true, nevertheless, that customers will impose upon you by taking their time about paying their bills, and during the summer months, when we are so busy, it is almost an impossibility to keep our collections up to what they should be. We have in this city, however, a very good retail dealers' association which helps us considerably. We send out notices to our debtors that unless we hear from them at a certain time we expect to turn their accounts over to this association for collection and it usually brings them around, as we find that most people do not care to have all the merchants in town find their names so listed. As an illustration we sent out several of these notices just recently, and all but three of them have since come in. Of those who came in was one who had an account that had been running for four years and the woman was very angry to think that we had sent her name to the association. She told us that if everyone paid his accounts as promptly as she did we would have no kick coming. We told her that if they did we would be obliged to go into bankruptcy, and furthermore that if we had known that giving her name to the association would have made her pay her bill we would have handed it in long ago.

We have other troubles than collections, but they are our worst. We always try to work off all the dead stock that we can in every possible way. Near here we have purchased several small lots of what we call small mill hemlock and of course we have to take the poor along with the good. Where we sell considerable No. 3 boards for sheathing purposes we are unable to sell anything lower than a No. 2 in 2-inch stock. Therefore in buying this small mill stock we get an accumulation of 2-inch stock that we are unable to move and we resaw it and surface it one side and sell it for a good deal less than No. 3 boards, thereby keeping it on the move.

A. MILLER & SON LUMBER COMPANY,
W. H. McKay.

The Western Forestry & Conservation Association will hold its annual conference about December 15. This year it will meet at Vancouver, B. C., and will give its main consideration to the problem of forest fire prevention and control.

WOODEN SHINGLES ELIMINATED.

Birmingham, Ala., Adopts Its Prohibitive Ordinance—The Measure Exhaustively Effective.

[Special telegram to AMERICAN LUMBERMAN.]

BIRMINGHAM, ALA., Oct. 2.—Birmingham's anti-wooden shingle ordinance, which has created nation-wide comment during the last year or so, became effective yesterday. This ordinance expressly prohibits the use of wooden shingles in the whole city of Birmingham and makes the violation of the ordinance a daily misdemeanor until abated. To the surprise of the lumbermen it has just been discovered that the amendment expressly mentioning wooden shingles was inserted in the ordinance just before its passage, June 10.

The ordinance as originally drafted specified that any roofing would be acceptable that could be fire-proofed. The lumbermen accordingly felt that wooden shingles would have "a show" in Birmingham for the reason that they could be fire-proofed. The amended ordinance kills the wooden shingle in Birmingham.

HANDLING REFUSE IN MICHIGAN.

Slabs and Edgings Put to Good Use—Vast Quantities Consumed in Manufacturing.

BAY CITY, MICH., Sept. 30.—The woodworking branch of the lumber trade in Bay City is of considerable importance. Approximately 100,000,000 feet of lumber has been manufactured here in the last five years. Formerly the slabs, edgings and other refuse went into fuel for evaporating brine in local salt works, but now they go into wood. One thousand feet of logs will produce a cord and a half of 16-inch wood.

The Kneeland-Bigelow Company, operating two sawmills here, handles 65,000 cords of wood annually that nets $1 a cord. The Richardson Lumber Company handles 28,000 to 30,000 cords, the Knapp, Stout plant about 20,000 cords and Ross & Wentworth about 30,000. The refuse of the plant of W. D. Young & Co., that manufactures about 25,000,000 feet of lumber, is mostly sold to the Dupont Powder Company, which operates a large plant and produces alcohol, charcoal and other byproducts. The Salling, Hanson Company and R. Hanson & Sons, at Grayling, ship out by rail about 50,000 cords of wood annually, and the Johannesburg Manufacturing Company, at Johannesburg, probably about 20,000 cords more.

About 160,000,000 feet of rough manufactured lumber reaches here annually and is worked up into the finished product in local factories and woodworking plants, and this produces a vast quantity of wood for which there is always an active demand in this part of the State.

FIGHT PARTLY WON.

Anti-Shingle Ordinance Amended—Will Not Be Applicable Until Suitable Substitute is Found.

MILWAUKEE, WIS., Sept. 30.—Indications are that the Milwaukee lumber interests have partly won out in their fight against the anti-shingle ordinance, which was passed by the common council recently. By a vote of 3 to 2 the building and grounds committee of the council has upheld the ordinance by killing an amendment, offered by Alderman Greene, that would have deferred the application of the new law for two years. Alderman Greene has been backing up the lumbermen in their campaign against the ordinance and he and various representatives of the lumber interests showed at the hearing last week that retail lumbermen have large stocks of shingles on hand and that they will suffer a great loss if the ordinance is allowed to stand. The ordinance was amended yesterday, so that it will not be applicable until a suitable substitute has been found.

Representatives of the lumbermen said that there is no more danger when wood shingles are used than when patent shingles are employed. At the request of the lumbermen, Chairman Grede, of the council committee, gave demonstrations of the combustible qualities of wooden shingles and of the patent roofing offered, by holding lighted candles under each. The demonstrations tended to prove that the patent roofing was far from being incombustible.

Building Inspector W. D. Harper's quotation from Fire Chief Sieferlich, of Chicago, to the effect that 20 percent of the fires in that city is caused by shingle roofs, was disputed by T. A. Bruett, of the T. A. Bruett Company, wholesale lumber concern, who contended that the fires would probably have occurred if the roofs had had the patent materials on them instead of cedar shingles. Frank M. Hoyt contended that none of the patent roofings had proved to be incombustible. John Picken said that he had no recollection of the fire in the eighteenth ward in Milwaukee having been caused by the ignition of a shingle roof.

Thomas A. Clancy, Milwaukee fire chief; W. D. Harper, building inspector, and various insurance men spoke in favor of the anti-shingle ordinance. Chief Clancy said that a conflagration might sweep over Milwaukee at any time and that the shingle roofs in the city would be responsible in a large measure. The chief attempted to show that from 1 to 5 percent of fires originate on roofs. He said that Milwaukee was backward in adopting fire prevention ordinances and that smaller cities have laws preventing the use of wooden shingles. Vigilance and fire proof construction, he said, had reduced the number of fires in Milwaukee last year by more than 200. G. W. Grossenbach, representing the Milwaukee Mechanics Fire Insurance Company, of Milwaukee, made the charge that shingle roofs were largely responsible for the fire that destroyed 600 homes in Hot Springs, Ark., recently and caused a fire loss of $1,500,000. He said that as a result of the anti-shingle ordinance a committee from the Milwaukee Board of Fire Underwriters was already working on a reduced insurance rate for Milwaukee.

LARGE LOSS BY FLOOD.

Calcasieu River on Rampage—Thousands of Logs Whirled Away to the Gulf of Mexico.

[Special telegram to AMERICAN LUMBERMAN.]

LAKE CHARLES, LA., Oct. 2.—The heaviest flood in the history of this section swept down the Calcasieu River this week, following four successive days of heavy rain. The water began rising Sunday morning and by Monday noon was over the river banks, putting the public service plant out of commission and flooding all the sawmills. The water continued to rise until last night it reached a record stage of 13.62 feet; a slight recession is recorded today. The estimated damage to the business interests is $100,000. Thousands of logs broke loose from the booms and were whirled away to the Gulf. Many of them will never be recovered and a heavy expense will be entailed in caring for those that are recovered. The engine rooms of all but one of the eight large sawmills are inundated and in some instances entire plants are submerged. Lumber in yards has floated away from some of the mills and is a total loss. It will be several weeks before the mills can resume operation, and will probably be months before all the logs can be rounded up and towed back to the plants. The damage to crops is great, but can not be estimated at this time.

STATISTICS OF MEMPHIS MARKET.

Lumber Handled in 1912 Substantiates Claim to Supremacy—Transactions in Detail.

MEMPHIS, TENN., Sept. 30.—The statistics committee of the Lumbermen's Club of Memphis has just made public its report covering the volume of business handled in Memphis and by Memphis concerns, together with that consumed by local manufacturing plants, for 1912. In submitting this report the committee, of which D. F. Heuer, of A. N. Thompson & Co., is chairman, says:

Your committee begs to submit the statistics of the Memphis lumber market for 1912. We have included in this report, as you will note, the amount of lumber handled through the retail yards of Memphis. This item has not been included in previous reports, but, as it is a very important factor in the consideration of our city as a lumber market, we have embraced same in our present report.

Although during 1912 a large part of the lumber business of this territory was compelled to suspend operations for a considerable period of time, owing to the floods in the neighboring territory, these conditions did not greatly affect the volume of business for the entire year and Memphis retains undisputed title to her supremacy as the leading hardwood market of the world.

The full report, as published at the instance of the committee, is given herewith:

		Total Feet.	*Total Value.*
1.	Amount of lumber manufactured in Memphis	134,299,000	$ 4,027,970
2.	Amount of lumber manufactured outside of Memphis	110,691,417	2,767,411
3A.	Amount lumber handled through Memphis wholesale yards not included in amount manufactured	84,997,540	2,975,245
3B.	Amount lumber handled through Memphis retail yards not included in amount manufactured	87,516,000	1,772,199
4.	Amount of lumber handled on direct shipment from mills and yards outside of Memphis, not included in amount manufactured	128,164,748	2,835,080
5.	Amount of veneers under ¼-inch thick manufactured in Memphis	79,879,404	762,564
6.	Amount of veneers under ¼-inch thick handled through Memphis	570,440	12,170
	Total handled	626,118,549	$15,152,639
7.	Amount of lumber and veneer exported from Memphis	18,322,410	824,508
8.	Amount of lumber and veneer exported from outside points	20,586,750	720,536
9.	Amount of logs received in Memphis by rail and river	109,212,070	2,407,575
10A.	Amount of lumber on hand in Memphis January 1, 1913, on wholesale yards	71,605,244	2,454,084
10B.	Amount of lumber on hand in Memphis January 1, 1913, on retail yards	22,148,000	448,000
11.	Amount of lumber on hand outside of Memphis January 1, 1913	53,083,108	1,477,404
12.	Amount of logs and bolts received at Memphis and manufactured into hoops, heading and other cooperage stock	18,432,350	370,500
13.	Amount logs and rough material received at Memphis and manufactured into vehicles and implement stock, turned work and pump rods	8,556,645	251,660
14.	Amount of lumber consumed by furniture factories, coffin factories, box factories, planing mills, flooring factories etc. in Memphis	64,192,569	1,348,449

PLANS ENLARGEMENT OF FIBER WORKS.

Involves Expenditure of Approximately $2,000,000—Land Subsidy an Important Factor.

OLD TOWN, ME., Sept. 29.—Important plans of the Penobscot Chemical Fiber Works, of Great Works, a part of Old Town, involving the erection of a paper mill and the expenditure of from $1,500,000 to $2,000,000, have just been announced by Superintendent Wentworth, of the company. The announcement was made at a hearing of the city government of Old Town in regard to a land dispute in which the company is involved, about the fixing of street lines and land which the company needs in order to build the mills. He has informed the people of Old Town that unless the company is able to get the desired land he fails to see how the company can ever build in Great Works, and that the extension will have to be built elsewhere. The people of Old Town and Great Works in general are eager that the matter be arranged amicably and that industrial enlargement may be brought in Great Works. It is thought something will be done in this direction very soon.

EXPERIMENT WITH WOOD BLOCKS.

Municipal Officials and Lumbermen Eagerly Watch Test Which Should Prove Conclusive.

TACOMA, WASH., Sept. 29.—An interesting experiment in street paving is being made in front of the Washington school in this city that is being closely watched by municipal officials and lumbermen. The block fronting the school is to be paved with 2x4 fir creosoted blocks. The experiment is the idea of Geoffrey Winslow, manager of the creosoting department of the St. Paul & Tacoma Lumber Company, and has been sanctioned by the contractor who has this district, by the city commission and by the board of education.

The argument advanced in favor of the 2x4 blocks is that it not only reduces the ultimate cost to the city but reduces the first cost with equal sufficiency as compared to asphalt on a concrete base. Wooden paving blocks used heretofore have been 4 inches wide, 4 inches deep and 8 inches long, the opinion being that a block with a smaller base than four inches would not stand the strain. Lumbermen believe that a 2-inch base block is sufficiently strong for all practical purposes and it is pointed out that properly treated wooden blocks have never shown more than one-fourth of an inch wear on the surface in ten years' time. Where a paving of such blocks is to be joined with brick paving success is thought to be obtainable by laying a 2-inch base of sand to make up for the smaller depth of the wooden block, brick paving generally being four inches deep, which is thought to be the chief reason why wood block has generally been the same size. In making the 4-inch block only clear lumber can be used.

Estimating asphalt paving in Tacoma with concrete base at $1.60 per square yard, it is said the experimental paving advocated by Mr. Winslow can be laid at considerably under that figure. In case the wood block paving does not prove its worth the St. Paul company agrees to replace it with asphalt. The Washington school is in the residence district and the board of education sees in the wood block paving an important factor in reducing the street noises in front of the school.

IMPORTANT OWNERSHIP CHANGED.

Cypress Tract and Sawmill Plant in Louisiana Transferred—The New Owners and Plans.

NEW ORLEANS, LA., Sept. 30.—By a deal finally closed this week, Senator Emil Sundberry and associates acquire the huge cypress timber tract formerly owned by the Burguires interests in Terrebonne Parish, with other timber adjoining, and the sawmill plant of the St. Louis Cypress Company, at Houma. The timber is taken over on a stumpage basis, it is understood. The Burguires holdings are estimated to cut about 100,000,000 feet, while the additional timber acquired in the same territory may cut another 50,000,000. The Burguires tract was the second largest body of cypress timber in Louisiana remaining up to this time in the ownership of others than manufacturers.

Associated with Mr. Sundberry in the new enterprise are George W. Dodge, his partner in the Napoleon Cypress Company; O. C. Sundberry, his son; H. C. Cook, who has been connected with the Napoleon Cypress Company as foreman for a number of years, and several Orleanians. It is understood that the major interest is held by the Messrs. Sunberry, and that O. C. Sundberry and Mr. Cook will have charge of the new operations. The final formal step in consummation of the deal will be taken at Napoleonville next Thursday, when the new company—probably to be known as the Houma Cypress Company—will be organized with a capital of $100,000.

The mill of the St. Louis Cypress Company, which is to be taken over, is in first class condition and will need little or no repairs. The new owners do not expect to begin sawing until about the first of the year, though they will begin woods work—deadening trees, digging connecting canals etc.,—the latter part of the week. The timber lies within a radius of eight to sixteen miles of the Houma plant, is easily accessible by a system of bayous and canals, and conditions are pronounced favorable for successful operation.

SOUTHERN LOGGERS IN ANNUAL.

Logging Superintendents of Leading Southern Mills Frankly Discuss Woods Operating Problems—Lowering Logging Costs, Use of Steam Skidders, Fuel for Locomotives, and Other Practical Subjects Handled.

NEW ORLEANS, LA., Sept. 29.—What promises to be the most largely attended and in every way the most successful meeting of the Southern Logging Association ever held was opened in the Grunewald Hotel today when the third annual convention of that organization was called to order at 10 a. m. by President J. B. Baker, of Hodge, La.

The convention was opened with prayer by Rev. H. R. Singleton, of the Parker Memorial M. E. South, New Orleans.

President's Address

Following the invocation President Baker spoke as follows in part:

Today we have a new way of logging that has been creeping, surely and silently, into our logging camps. A company is neither more prosperous nor more progressive than are its logging camps, and when the logging man is progressing, you may rest assured that his company is being financially benefited.

Today our best logging men are men who have come up from the ranks, and the natural training they have received makes them do things, go without things and, above all, think for and wait on themselves. The superintendent has been raised on hardships, which have always put him on his mettle, and yet, as he worked, he was so rewarded that he never became depressed or cast down.

The average logging superintendent is a peculiar type of a strong man. In most instances, I find him to be a man who is earnest, kind, generous, intelligent and effective; he is a man who has snatched success from the face of failure; a man who has been tried and is willing to be tried again.

You men who are here today represent one of the most expensive departments of the lumber industry; you are here from far and near, and I hope you are wideawake and will bring to command your most progressive ideas for discussion. I know that all of you have been daily struggling with the intricate problems of logging and, no doubt, feel that you should be silent, but this association was organized for your benefit, and it will only help you as you help each other.

You will each admit that logging is a very attractive business, because of the fact that you are always more or less thrown upon your own resources on account of being located a great distance from your superiors. This being a fact, it is necessary for you to take considerable time to think and plan your work, and always to embrace in these plans much faith and reliance on those men who have to do the actual labor. Work without faith does not bring good results, and laborers not trusted and confided in will not get you the best returns. * * *

I wish to call your special attention to the talk of N. C. Schlichter on Y. M. C. A. work. There is nothing you can do that will bring you greater reward than the upbuilding of the men that are working for you. They all have a life to live, the same as you, and, in many instances their hardships and privations are many. Many of them do not know what it is to have a friend; many of them forget their Supreme Friend, and their only chance for a happy home hereafter may be in your care. So guard well their welfare and try to throw in their way as many deeds of kindness and words of cheer as you can.

There is a growing tendency for labor and capital to be antagonistic, and this is brought about because we so often treat our men as so many cattle. The highest ideal of this life and the greatest honor that can be bestowed on man is to have the confidence, esteem and friendship of his fellow man. To attain this honor, try to remember the welfare of your men at all times and, where possible, lighten the burden of him and those depending on him for a livelihood, for in doing this your reward will not only be great in dollars and cents, but you will receive credits on the book in that Great Beyond, where one abides, who said "Inasmuch as you did it unto the least of these, you did it unto me." * * *

May the future business and life of each and all of you be so prosperous, happy and bright that in your darkest hour you can smile and say—

> "There is no Chance, No Destiny, No Fate,
> Can Circumvent or hinder or control,
> The firm resolve of a determined soul."

The president's address was listened to with the greatest attention and at its close the speaker was warmly applauded.

Secretary-Treasurer's Report.

At this stage Secretary-Treasurer Boyd, of New Orleans, submitted his annual report, showing that notwithstanding a larger expenditure during 1913 than during any previous year the association has the largest cash balance on hand in its history. The report follows:

During the year district meetings of the association were held at Beaumont, Pensacola, Mobile and Hattiesburg, at each of which new members were received. While the attendance was not as large as it should have been, those who did attend received much benefit.

This is the fourth meeting the association has held. Those of you who were here at the organization in 1910 will notice a great improvement in this meeting as compared with that one. Then we did not know just what we wanted; our discussion of topics was informal. At this session, however, we have a number of able addresses to consider, as well as an opportunity to discuss problems that are causing worry.

One of the most valuable features of this meeting will be the consideration of the answers to questions prepared by President Baker that have been circulated among lumber companies.

The growth in membership has been large, showing that lumber companies are beginning to realize that this organization is an important part of their equipment.

In conclusion, your secretary can not refrain from expressing his gratitude to those who have written him telling what value the association has been to them.

Treasurer's Report.

I herewith submit my report as treasurer for the year beginning September 20, 1912, and ending September 27, 1913:

RECEIPTS.

From dues		$407.00
Balance on hand September 20, 1912		53.51
		$460.51

DISBURSEMENTS.

Exchange on checks		$ 2.80
Printing:		
Programs, questions for meetings	$28.50	
Pamphlet reports of proceedings	71.07	
Letterheads and miscellaneous	15.00	
		114.57
Postage:		
Mailing pamphlets	$28.00	
Stamped envelopes	67.50	
Postal cards	3.00	
On letter heads mailed to officers	1.06	
		99.56
Telegrams and miscellaneous		8.30
Stenographer		73.00
		298.23
Balance on hand September 27, 1913		$162.28

Second Cut of Yellow Pine.

The next on the program was the reading by Secretary Boyd of a paper prepared by Herman H. Chapman, professor of Forest Management of Yale Forest School, on "Possibilities of a Second Cut of Southern Pine." The paper follows in part:

Since 1907 the Yale Forest School has conducted the field work and instruction of the senior class in the spring term in coöperation with lumber companies located in the Southern States.

In no case has there been a formal contract between the company and the school, but under verbal agreement the

J. B. BAKER, HODGE, LA.;
Reëlected President Southern Logging Association.

company has allowed the students the freedom of its mills and lands for purposes of instruction, built temporary wooden shacks for quarters in camp, instructed its employees to give such information as will be of assistance in instruction in logging and milling, and furnished commissary supplies at reasonable prices. The students maintain their own commissary in camp and pay all their own expenses.

The work is conducted primarily with the object of instruction, but a large amount of information is collected and given to the company. This consists of a topographic map, an estimate and description of timber and young growth, data on the growth of the timber, suggestions for management of the tract for the production of wood, and studies of present utilization and waste in logging.

The present policy of most holders of stumpage in the South is clear cutting, which is followed by accidental or intentional broadcast burning of the slash, and sale of the land to settlers or land companies; and this is attempted in spite of the fact that there is at present no urgent demand for much of this pine land and that those timber companies still have ten to thirty years' cut in sight.

A few farsighted firms have attempted in places to limit the present cut to a certain diameter, reserving the small trees for a future crop. This is a move in the right direction, yet analysis shows that adherence to such a rigid diameter limit does not leave the most vigorous trees.

The author dealt at length with the composition of the forests, damage to timber, age classes, reproduction and growth of pine, and gave tables showing the average growth in diameter, breast high outside bark, of shortleaf and loblolly pine, using 200 trees as a basis, covering a period of 100 years at ten-year intervals and also the average yield per acre of even-aged stands of shortleaf pine under ordinary conditions on large areas in Ashley County, Arkansas. The latter was computed by the Doyle rule.

He also took up the management of the tract, agricultural possibilities and told of securing a second cut of pine. He explained at length the condition of cut-over lands and told of a proposed plan for securing a better cut as well as the results of experimental marking for a second cut.

He pointed out the necessity of marking trees to be cut, and declared that if cutting is done on a basis of rigid diameter limit, at least one-half of the trees left will make poor growth. The growth of virgin stands of pine, he said, is determined by the age and condition of the timber, and stands from which the old, over-matured trees have been removed present a condition quite different from that existing on the average "forty" of virgin timber.

He then took up the increase in value of second cut and also told of brush disposal. Of the financial aspects he said:

Since the leaving of a portion of the stand which would otherwise be cut takes the form of an investment, the probable returns should be calculated. Assuming that 2,630 feet board measure per acre left standing will increase in ten years to 4,466 feet board measure, this computation is easily made.

With land valued at $5 an acre and stumpage at $5 a thousand, this investment should, after paying all expenses, yield 5 percent compound interest at the end of ten years. Assuming an initial cost of marking of 10 cents an acre, and allowing 5 cents a 1,000 feet, board measure, for lopping and burning the tops, an average stand of 8,000 feet board measure gives an expense of 50 cents an acre. Tops can be piled and burned for from 25 to 50 cents a thousand feet, board measure, and without piling, the expense is greatly reduced. The following is a summary of the initial investment:

2,630 feet b. m. @ $5	$13.15
Land	5.00
Marking and brush disposal	.50
Total initial investment per acre	$18.65

Assuming there is a tax of 1 percent on this valuation gives 18 cents a year. Fire protection if undertaken should not cost over 2 cents an acre, making a total of 20 cents a year for taxes and protection. Capitalizing at 5 percent, this would mean an investment of $4 an acre. This makes a total investment of $22.65, which at 5 percent compound interest amounts to $36.89 in ten years. At that time if the land is still valued at $5 and the $4 capital used to supply the 20 cents annual charge is credited, the net cost of the timber in ten years at 5 percent compound interest is $27.89.

At this time the stand will contain 4,466 feet, board measure, to the acre. If it is worth $27.89, it has paid 5 percent, which is equivalent to a stumpage value of $6.25 a thousand. It is fair to assume that this increase in price will occur in the ten-year period.

If the lands cut over are not left in a productive condition, they will lie idle until sold. No interest on the investment will be earned during this time, but taxes will continue and the total loss should be gauged by the compound interest on the money invested in nonproductive lands. The price of land may rise, in which case the increased value will tend to offset this loss of interest. This would occur whether or not the land were cut over.

If the lands are not cut over, the original uneven-aged growth will probably increase in value, but at half or less than half the rate percent on the investment that it would if culled of dead or unproductive capital. In either of the above cases, these lands as a whole, with growth balancing decay, are carried by the company at much greater relative cost than if put into condition for growth.

Once the land is cut over properly, the investment in this second cut will carry itself independent of all other portions of the operation, and the investment left in the woods or spent for protection or taxes will, as a rule, be returned with 5 percent compound interest when the final cutting is made.

Cutting should, therefore, be confined as much as possible to stands which are suitable for a second crop, since the sooner these are cut over the greater will be the amount of growth secured before the close of the whole operation. An exception to this rule is timber which is very old and decadent, which should be cut as soon as possible. But unless there is rapid deterioration, it will pay to hold mature timber for better prices.

In conclusion he declared the measures necessary to secure a second cut are recommended as being inexpensive and practical. The measures necessary to secure reproduction and protection of seedlings would involve a slightly increased expense and would promise no immediate financial return, but would preserve productiveness of the soil, by insuring a timber crop on land not farmed and might prove ultimately of great financial value to the land owners when they sell these lands. These measures, he said, can be urged only as a matter of far-reaching public policy.

Close Utilization of Timber.

Secretary Boyd explained regarding the following paper prepared by Prof. Ralph C. Bryant, of Yale Forest School, that it was a treatment of data collected in a study of logging methods on the operations of the Crossett Lumber Company, Crossett, Ark. The original treatment of these data was presented to the Southern Logging Association at its annual convention last year. The present paper, however, deals with the data from a somewhat different viewpoint and in a very practical manner. The former paper was of a critical nature, whereas the present is more directly suggestive of methods of improvement in practice.

Mr. Bryant decried the lack of close utilization of yellow pine timber so apparent on many operations in the South. He said it had been the practice of yellow

pine operators in the past to cut high stumps and that the loss of merchantable material from this source in many cases has totaled several percent of the stand. Commenting upon this he said:

There are several points to be considered in determining the proper height at which stumps should be cut. Among these are: (a) size of the timber; (b) soundness of the butt; (c) amount of pitch in the butt; and (d) labor conditions in the region.

In the case of sound trees stump heights should not be greater than the diameter of the trees at the cutting point, with a maximum height of 24 to 26 inches, even for the largest trees. That the latter heights are thoroughly practical for large trees is evidenced by the fact that careful operators use them.

Where butts are defective or pitchy there may not be any gain from cutting low stumps since the added material secured might be thrown away at the mill; however, the faller's judgment should not be taken in such cases without being checked by a saw boss.

A difficulty is sometimes experienced by operators in securing low stumps when labor is scarce, because the lower the cut the more fatiguing the work, and unless all operators in a given section have the same standards, the workmen will seek employment with those who are most lax in their methods.

It may not always be possible to secure as much extra material by cutting low stumps and saving these sections as is shown in the tables I gave, because of the possibility of having to leave a short section in the top of the tree which is not of sufficient length to make an added 2 feet on the top log; nevertheless, the material saved in the butt log will be of greater value from the standpoint of both quality and quantity, because of the larger diameter and the freedom from knots.

He outlined the loss from breakage and felling, and called especial attention to the cutting of crooked and forked trees. He illustrated the proper and improper cutting of forked trees. He explained fully the trimming length of logs, the selection of log lengths, and waste in the tops of trees. He told of a method of cutting rough tops and gave a table showing measurements on cut-over lands in Arkansas, illustrating the lack of close utilization.

He suggested that the successful solution of the utilization problem can be brought about only by thorough inspection of felling and log making. Where ten or more saw crews are employed, the proper supervision of this work will require the services of a saw boss, who should be responsible to the team boss, in order that close coöperation may exist between felling and skidding crews. He outlined the duties of the saw boss as follows:

(1) The distribution and care of all tools issued to fallers and logmakers. Economy is effected by a system of accounting for tools and other equipment. Special attention should be given to checking up the length of measuring sticks each day.

(2) Culling all trees and logs that are not worth handling.

(3) The instruction of the workmen in marking off log lengths on felled trees in order to enable them to secure the maximum quality and quantity of timber.

(4) The thorough inspection of the work of the felling and logmaking crews to point out mistakes for the purpose of avoiding them in the future.

(5) The scaling of all timber that is felled.

Difficulties will be experienced at the start, but instruction by a saw boss for three or four weeks will result in a marked improvement in the work. Careful supervision, however, will be required constantly, for it is easy for workmen to fall back into old habits.

The saw boss should, after a few weeks, have sufficient time to scale the timber at the stump, since his inspection duties will require him to visit every felled tree. The wages of a scaler can thereby be saved.

The salary of a competent saw boss should be at least $100 a month, because a man without proper conception of the work would be of little value.

The successful inauguration of a scheme of this sort should involve some reward for the laborer who does his work well, inasmuch as he is called upon to exercise greater care and intelligence, and the additional profits accruing to the lumber company should, in part, be shared with him. This reward might assume the form of a bonus of a few cents per thousand feet of timber cut, or a slight increase in the daily wage.

When Secretary Boyd had finished reading Mr. Bryant's paper President Baker led a discussion by suggesting that most of the companies are losing money every day cutting crooked logs. He said that mill people always thought that crooked logs meant that the logging crews were getting behind.

Thomas Laffin, of the Mississippi Lumber Company, Quitman, Miss., advocated the use of an iron stick for measuring logs in the woods, as it could not be cut off short-measured logs would be avoided.

F. M. O'Brien, of the Cotton Bros. Cypress Company, Morgan City, La., said he had used successfully a wood stick with an iron extension.

R. T. Gallagher, of the Sumter Lumber Company, Electric Mills, Miss., said he had used a wood stick with a 10 penny nail driven in each end. This prevented the cutting of the stick and the resulting short logs.

The session then adjourned.

MONDAY AFTERNOON.

The afternoon session was opened at 2 o'clock with an address on "Organizing New Logging Camps," by R. Lee Bass, of the Louisiana Sawmill Company, of Gleumora, La. In briefly introducing his subject Mr. Bass said his operation is new and the mill is not yet ready for logs. Continuing, he said:

In organizing logging camps there are many things to take in consideration, such as the life and size of the plant, the kind of timber and the territory to be logged, as well as the kind of equipment to best suit your needs. The questions of how and where to build your camp houses, whether they are to be on wheels or not, are also important.

I want to lay out my camp so each race will have quarters to itself and if I have a camp commissary I try to place it so each person can go to it or the doctor's office or my office without going near or molesting others. In organizing camps I locate on some of the main lines, then build a temporary line to the right and place the whites on or near it and then build a temporary line on the left of the main and put the colored on it. So the commissary and these offices are near the main line and between the two quarters and I always try to have the school houses convenient for each side, and of course these are used for churches.

I have found it a good plan to make each race stay on its own side of the camps unless it had some important business on the other side. When you place your houses or cars as you want them, I have found it a good plan to group the different families for the different departments as near as practical.

I think it best to build all of your houses or cars alike as near as possible and make everything as convenient as practical. Once when I first began logging I was building a camp and was building all of the camp cars alike in every respect and a very small family would only use one car of two rooms and larger families would use two of these cars, which would give them four rooms. Well, a family moved into one of these double cars and the stove flue was not at the place to suit them, so I changed it and it was not long before they soon decided on another change, and when we got ready to move camps they wanted one of the rooms changed to the other end of the other car, of course causing a few more changes of the flues, and after that I learned that I could change the occupants easier than I could the flues and the location of the cars.

In organizing camps some of us make them too large for the operations and have more men than are necessary to do the work, and if you have more men around than are needed you will work a lot of them when you should not and therefore increase your costs. While on the other hand there are camps that are too small for the operations. I am very sorry to say that sometimes camp houses or cars are inconveniently arranged and have no water and poor accommodations for the laborers, and very often a worthless class of labor is secured and therefore your organization is not satisfactory.

In organizing camps they should be laid out so that they will get good drainage and should be kept clean and in good sanitary condition.

Good camp cars, good schools, boarding houses with good beds and delicious "chuck," insure one of a good camp organization. But this is not all. We should stop and think of other people and not do too much starching and ironing and forget the man that furnished the money for the investment and have him wondering where he is to come in for his part of these good things.

A brief discussion of labor and camp conditions then was indulged in. Among the speakers was B. P. Head, of the Kaul Lumber Company, Tuscaloosa, Ala., who said his company got as many families as it could, keeping about 250 portable houses. The company carries a church and a school with each camp, and keeps the camp in the most sanitary condition possible. About 60 pupils are in the school at present.

Cost of Boarding Men.

Owing to the illness of C. C. Curry, of the Vredenburgh Sawmill Company, Vredenburgh, Ala., the subject of "Camp Boarding House, or How to Feed Men" was handled by means of general discussion.

J. B. Work, of Lumber City, Ga., of the Ocmulgee River Lumber Company, said his company did not wish to make any money on boarding its men, merely wanting to "break even."

V. C. Langley, of Laurel, Miss., of the Wausau-Southern Lumber Company, said his company aimed primarily to keep the men satisfied by feeding them well. The boarding house had, however, paid a small profit after boarding the men for $3.50 a week.

R. T. Gallagher, of Sumter Lumber Company, Electric Mills, Miss., said his company had been losing money on its boarding house. Since the first of September the company has been contracting its boarding, but the contractor is making almost nothing.

T. B. McCormick, of Sardis, Miss., of the Carrier Lumber & Manufacturing Company, said his company just about broke even on the boarding house.

L. G. Smith, of Evadale, Tex., with the Kirby Lumber Company, emphasized the importance of proper food.

W. W. Wolfe, Chicora, Miss., with the J. J. White Lumber Company, said his boarding house was not making any money, but was feeding its men "all they could stand up to."

Schedule 1.

SCHEDULE OF PAY FOR PROPOSED BONUS SYSTEM.

Number of logs....	50	51 to 60	61 to 70	71 to 80	81 to 90	91 to 100	101 to 110	111 to 120	121 to 130	131 to 140	141 to 150
Daily wage now in use—						Base.					
Leverman	$2.00	$1.50	$1.60	$1.70	$1.80	$1.90	$2.00	$2.10	$2.20	$2.30	$2.40	$2.50
Flagman	1.50	1.13	1.20	1.28	1.35	1.43	1.50	1.57	1.65	1.72	1.80	1.87
Dogger	2.00	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50
Rider	1.25	.94	1.00	1.06	1.13	1.19	1.25	1.31	1.37	1.44	1.50	1.56
Total for one line	$6.75	$5.07	$5.40	$5.74	$6.08	$6.42	$6.75	$7.08	$7.42	$7.76	$8.10	$8.43
Total for four lines	$27.00	$20.28	$21.60	$22.96	$24.32	$25.68	$27.00	$28.32	$29.68	$31.04	$32.40	$33.72

Schedule 2.

SCHEDULE OF PAY FOR PROPOSED BONUS SYSTEM.

Number of logs....	200	201 to 240	241 to 280	281 to 320	321 to 360	361 to 400	401 to 440	441 to 480	481 to 520	521 to 560	561 to 600
Daily wage now in use—						Base.					
Foreman	$4.00	$3.00	$3.20	$3.40	$3.60	$3.80	$4.00	$4.20	$4.40	$4.60	$4.80	$5.00
Fireman	1.75	1.31	1.40	1.49	1.58	1.66	1.75	1.84	1.92	2.01	2.10	2.19
Watchman	1.50	1.13	1.20	1.28	1.35	1.43	1.50	1.57	1.65	1.72	1.80	1.87
Woodman	3.25	2.44	2.60	2.76	2.93	3.09	3.25	3.41	3.57	3.74	3.90	4.06
Corralman	1.50	1.13	1.20	1.28	1.35	1.43	1.50	1.57	1.65	1.72	1.80	1.87
Total	$12.00	$9.01	$9.60	$10.21	$10.81	$11.41	$12.00	$12.59	$13.19	$13.79	$14.40	$14.99

Schedule 3.

SCHEDULE OF PAY FOR PROPOSED BONUS SYSTEM.

Number of logs....	200	201 to 240	241 to 280	281 to 320	321 to 360	361 to 400	401 to 440	441 to 480	481 to 520	521 to 560	561 to 600
Daily cost under wage system—						Base.					
Cost of four lines	$27.00	$20.28	$21.60	$22.96	$24.32	$25.68	$27.00	$28.32	$29.68	$31.04	$32.40	$33.72
Miscellaneous skidder cost	12.00	9.01	9.60	10.21	10.81	11.41	12.00	12.59	13.19	13.79	14.40	14.99
Total cost	$39.00	$29.29	$31.20	$33.17	$35.13	$37.09	$39.00	$40.91	$42.87	$44.83	$46.80	$48.71
Production estimated at 150 feet to log		M 30	M 36	M 42	M 48	M 54	M 60	M 66	M 72	M 78	M 84	M 90
Cost per M		$0.976	$0.866	$0.79	$0.73	$0.686	$0.65	$0.62	$0.595	$0.575	$0.556	$0.54

J. F. Woods, of Call, Tex., with the Kirby Lumber Company, said the boarding house at his camp did not make any money at $3.50 a week.

Detailed Cost Systems.

The discussion of the boarding house question brought out a wide divergence of opinion and of methods of accounting. Some of these differences were made the basis of an introductory address by D. C. Harris, of Louisville, Ky., on the subject of detailed cost systems. Mr. Harris is with C. C. Mengel & Bros. Box Company, operating in mahogany in Mexico.

The speaker said his company's system makes provision for 120 subdivisions and enabled the foremen in the woods to speed up any branch of the logging operation.

J. T. Mahoney said that Eastman, Gardiner & Co., during the last eleven years have subdivided 15 individual accounts kept in the office into 60 divisions for the use of the woods operator.

Bonus System or Task Work.

The next number on the program was a paper on "Bonus System or Task Work," prepared by S. Rigell, of Greenville, Fla., with the J. S. Betts Company. As Mr. Rigell was unable to be present his paper was read by Secretary Boyd.

For any system of task or bonus work to be successful there must be an incentive equal in proportion to employer and employee, declared Mr. Rigell. This, he said, has been the rock on which a great many have wrecked all hopes of success in an effort to get men interested in task or bonus work. In the eagerness to win, employers lose sight of the fact that the laborer must have an incentive equal to his own, otherwise there can be no lasting results. Mr. Rigell declared that since the beginning of time all important undertakings, whether good or bad, have been spurred onward by strong personal incentives in the breast of some human being. In his opinion this cardinal fact must be considered in the successful handling of men.

From personal experiences Mr. Rigell said he had found men more or less of a failure by reason of the fact that the incentive offered had no lasting, tangible value. He told of his first experience in task work as a boy, when told by his father that he might go fishing as soon as he completed plowing the peach orchard. While the task looked large, the dogwood trees were in full bloom, spring was in the air, and he knew the fish would be biting fine. He did not stop for the noon hour, but completed his task about one o'clock, and as a specimen of inefficient work he declared it never had an equal. He said that while digging bait his father inspected the work and on his return from the peach orchard brought some "peach tree sprouts" with him, which he used very effectively, and as a further penalty made him grub roots in the potato patch all the afternoon. This system, he said, was typical of that which he and other logging men have used and from personal observations he had found that all schemes of this type are ineffective. He told those present he had not a doubt but that each had some pet scheme of cajoling his men to extraordinary effort, but warned them that unless their incentive had material, tangible value, they could have no continued success.

Except individually or sporadically, he said, the incentive of love, hate, fear, ambition, pleasure or cupidity alike will fail. The man's knowledge that he has honorably earned all that which will supply the necessities of life; that his employer recognizing his worth has supplied him with the means, the speaker said, is the only incentive strong enough to make employees put forth continuous and efficient effort. He pointed out that the great object of all logging men has been to reduce the cost of production and with these facts before him and also the germ of an idea in mind which those "peach tree sprouts" implanted, he said that with the valuable aid of one of his former employees he worked out a bonus system which has been placed in successful operation and in his opinion has the right incentive. It follows:

After pointing out the advantages of this system he told of an instance where his men had been promised a day off if they filled the log pond by a given time. Spurred by the incentive the work was finished, yet circumstances arose over which the company had no control and the reward was denied.

"This," he said, "implants a distrust of task work in the employees' minds." Had the bonus system been in use the men would have received reward for extra effort.

Thus, he pointed out, it can be seen that the effect of the bonus system is wide in its scope, it sets all employees, from the general manager down, to looking for and removing the cause of failure. Each employee

within his range will in effect become a foreman—is financially interested in the results—therefore motives of friendship or otherwise will not last under a continued drain on his purse. In conclusion he asserted that the bonus system of pay is practical for each department of logging operation. It is in use in sawmills, factories and other like organizations and the speaker said, if given a fair trial, men will become enthused with the idea. The problems of how to meet the high cost of living will have been solved and when the idea has become firmly established, the efforts of the Industrial Workers of the World and other similar organizations will prove ineffective and their teachings forgotten.

Discussion of Mr. Rigell's paper was opened by C. P. Meyer, of Houston, Tex., assistant to General Manager B. F. Bonner, of the Kirby Lumber Company. Mr. Meyer said he was very much interested in a bonus system, and that if a scheme could be devised that would increase the efficiency of each unit of labor it would mean to secure a bigger return on the investment in machinery and equipment.

Mr. Mahoney discussed briefly an attempt of Eastman, Gardiner & Co. to introduce the inefficiency system into its woods operation.

Mr. Harris also told of a limited application of the bonus system in the operations of C. C. Mengel & Bro. Co. at Louisville, Ky.

W. J. Stebbins, of Garyville, La., assistant manager of the Lyon Cypress Company, told of a piece-work system introduced by his company which by making a 10 percent increase in wages the amount of work was increased fully 10 percent. At first the men struck, but in a few days they saw that they would make more money under the bonus system and returned to work. The scheme has since worked out very satisfactorily and in Mr. Stebbins' opinion the men would not care to go back to the straight wage basis.

G. P. Gammill, of Pelahatchie, Miss., of the Gammill Lumber Company, said his company had a limited bonus system in operation.

R. Lee Bass said that the Edgar Lumber Company used to pay substantially all of its woods workers by the thousand, and that the plan worked out well.

Cutting Logs.

A discussion of the cost of cutting logs was started by V. C. Langley, of Laurel, Miss., of the Wausau-Southern Lumber Company, who read the following paper:

The main consideration in log cutting is the saving of timber.

The beginning, of course, is at the stump, and 95 percent of the virgin longleaf yellow pine grows out of the ground like a piece of piling, and should and can be cut within seven or eight inches of the ground.

There are numerous advantages in low stumps: the saving of timber, the elimination of hang-ups where steam skidders are used. This also applies to a considerable extent where skidding is done with teams and wagons.

In cutting the depth of notch will vary according to the size of the tree and how heavily it leans.

My experience is that a large tree that leans heavily should be notched to the depth of six or eight inches, and if after you have sawn in this depth and cut it out you deepen the notch in the heart from two to four inches it will prevent, to a large extent, the pulling of long slivers, which we all know is a frequent and serious damage to the butt log.

In felling trees care should be taken to avoid all stumps possible and also to prevent falling timber across other logs from the first limbs to the top, as this is where we get most of the broken timber.

In measuring up your tree be sure that your sawyers are provided with a correct measuring pole. I use an 8-foot pole, plainly marked every two feet, and 3-, 6- and 9-inch measures on each end. I also use a strip of band iron on each end to prevent pole from being cut. In cutting up the tree we allow as follows; i. e.: short logs three inches, 32-foot logs six inches, and 48- to 54-foot logs nine inches. This allows three inches on each log in case it is cut to short lengths at the mill. I consider that this is plenty of margin for cut-offs and trimmerman, and that more is an unnecessary waste. Logs should be measured and cut so as to take out crooks as much as possible. Where top is smooth and straight we cut down to six inches in diameter.

Before sawing into logs care should be taken that swinging trees are blocked up to prevent splitting.

I do not think it is policy to do any long butting at the present price of stumpage, as there is scarcely a butt log but what you can get enough short timber to considerably more than pay for the cost of handling.

After reading his paper Mr. Langley said he was cutting everything down to 7 inches. A vote was called for and it was found that since the last annual meeting of the association about 15 superintendents had reduced the height of the stumps.

Logging Costs.

In starting a discussion of logging costs C. P. Meyer, of Houston, Tex., assistant general manager of the Kirby Lumber Company, said that the quality of lumber produced should be considered in figuring logging costs. Shortly after last year's meeting of the association he called a meeting of his superintendents to discuss the question of crooked logs. Afterward the boys sent better logs and the result was shown in better average price received for lumber produced.

As to the importance of checking up in detail the various items, Mr. Meyer cited his own experience during the last year. He said that in oil he had shown a saving of $186 a month between June and January. On feed, by careful checking, he had reduced the cost per mule per month from $11.16 to $9.34.

The discussion showed that most companies have excellent methods of determining costs and that the superintendents are giving great attention to each of the many items that go to make up the total charged to woods operations. While the accounting methods of the various manufacturers differ so widely as to make intelligent comparisons of respective items impossible, yet the discussion, which was frankly participated in by most of the superintendents present, brought out many very helpful suggestions.

Total costs of logging from stump to pond varied among the different concerns and at different periods with each concern. For example, one concern's cost in July was $2.44, but in August it was $2.84, the difference being due to conditions under which the work was carried on.

Another concern that was cutting 32 to 54-foot logs in timber running about 12,000 feet to the acre had an average cost of $2.93 a thousand during the first six months of 1913.

Still another concern found its cost to be about $4.17 a thousand of late, but as compared with those having lower cost this concern charged many more items to logging cost and subdivided those items minutely.

One large operator's cost for three months—October, November and December, 1912—averaged $3.17; while the same company's cost for June, 1913, was $3.12.

A cost of $3.72 was reported by one very able superintendent, who said he was hauling logs about 29 miles; this cost being a 6-months' average. His logs were running about 7 to 1,000 feet and 10,000 feet to the acre.

With a logging cost of $3.43 a thousand one superintendent said his logs scaled an average of 209 feet. He was using slip-tongue carts and hauling from 300 to 600 yards; the average distance being very little more than 300 yards. He uses three crews of seven men each and four mules to each cart. His timber cut about 7,000 feet to the acre.

This very interesting discussion was at its height when Monday's session of the convention adjourned.

TUESDAY MORNING.

The morning's session Tuesday was opened at 10 o'clock by the appointment of the following committees:

Resolutions—C. O. Lauve, of Charleston, Miss., Lamb-Fish Lumber Company; L. E. Landry, of Garyville, La., Lyon Cypress Lumber Company; and D. A. Pennington, Groveton, Tex., Trinity County Lumber Company.

Nominations—Oscar Marsan, Clio, La., Opdenweyer-Alcus Cypress Company; J. C. Colgon, Holly Ridge, La., Norman Lumber Company; B. P. Head, Tuscaloosa, Ala., Kaul Lumber Company.

Civil Engineering Problems.

Following the appointment of committees Secretary Boyd read a paper on "Engineering Problems in Log-

V. C. LANGLEY, LAUREL, MISS.:
Logging Superintendent Wausau Southern Lumber Company.

ging Operations" prepared by H. W. Bell, of Laurel, Miss., who was unable to be present. Mr. Bell's paper follows:

I deem it a privilege of no small consequence to be selected to appear before this honorable body to discuss a question that no doubt many of you have given considerable thought. To the modern logging operation, the railroad is a necessity, and the superintendent of that operation may be expert on logging cost and a No. 1 executive, but to secure a railroad that for the least cost best serves this purpose he should have an engineer well versed in railway construction. This engineer should report to the superintendent, who will point out to him what territory he desires to log, give him sketches of the timberland and assist him in planning his lateral spurs from his main line.

Gentlemen, no doubt many of you have had sad experience with some young engineer, employed from the office and sent out to you to do your bidding. This engineer may have been out of college only a few weeks or months, and knows only the technical part of his work: hence his work is a failure, and the engineering profession is censured by the lumber company.

You must not employ a boy to do a man's job; you must have an engineer who understands the complex problem of location. The solution of these varied problems is more or less independent. The guiding principle applicable to all departments of engineering, that the best structure is that which for the least cost best serves the purpose for which it was intended, should control even though the resulting structure be inferior in point of scientific design to some other.

The best roads as regards construction and grade may be a failure because of excessive first cost, while cheap construction will entail such heavy operating expenses that it may be equally unprofitable.

Construction Points.

The alignment must be as free from curves as the topography of the country will allow, while heavy grades are at the same time excluded. These two requirements conflict, and must be as well adjusted as possible. The amount of earthwork and bridging must be kept down to the lowest limit. The length of railroad and the time it will be in operation enter largely into the construction. The superintendent should give these data to his engineer, who in turn will secure the class of locomotive which will operate over his road, and with the information he can figure his grade line to pull the maximum load that will be required by his superintendent.

How many of you have had your troubles with the average county surveyor? A man elected by the people regardless of his professional knowledge, who, through ignorance, runs an erroneous line, bringing on discord, dissatisfaction and possibly legal procedure among your neighbors. If such is the case with a native, you have sown the seed of public sentiment against yourself and your company, whereas an engineer with experience and a little diplomacy can prove his work to the satisfaction of all concerned. Many of you possibly think that a county surveyor has the authority vested in him by the law of establishing a line. This is a mistake; he can not establish a line where all parties are not absolutely satisfied with his survey. If dissatisfaction arises it is a question of arbitration and for the courts to decide. He must show that he has followed the Government survey, and the Government survey will hold, even thought it be proven that the original Government survey was in error.

A number of engineers two years ago endeavored to put a bill through the legislature requiring all engineers and surveyors to stand an examination for competency before an engineering board appointed by the governor, but this was met by opposition of the surveyors all over the State, and our effort was in vain.

Gentlemen, I bring this in to impress upon you that the greatest engineering problem that faces you is securing a competent engineer. I reluctantly admit that the engineering profession is hampered by men claiming to be what you are looking for, but who can not "deliver the goods."

Feeding Work Stock.

Perhaps on no subject discussed at the meeting was there less accurate knowledge disclosed than on that of feeding work stock. Discussion of this subject was started by President Baker, who referred to a paper he had prepared on "Feeding Work Stock."

In his paper Mr. Baker referred briefly to some of the technicalities connected with the principles and practices of feeding, which, in his opinion, the feeder should understand in order that he may be able intelligently to apply the principles to the practice. He pointed out that the body of the living animal contains and is made up of a number of substances very similar to those found in plants, such as water, nitrogenous matter or protein, fat, and mineral matter. In the act of living these materials in the animal body are constantly being used up and if not continually supplied through the medium of the various plant food products, the animal will gradually become emaciated and no doubt ultimately die.

In the case of herbivorous animals such as the common domestic animals of the farm he declared their food should contain, in addition to those mentioned, carbohydrates, or nitrogen-free extract, of which starch and sugar are good examples. He called attention to food materials which must be used to build up and nourish the body tissues of the animal, among them being water, ash or mineral matter, protein and carbohydrates, briefly describing each.

In speaking of oats he said analysis shows that in 100 pounds of oats there are 11 pounds of water, 3 pounds of ash, 11.8 pounds of protein, 9.5 crude fiber, 59.7 pounds of carbohydrates and 5 pounds of fat.

He declared that while it is necessary to know the percentage of different nutrients contained in oats, it is also very important to know what percentage of the amount of each substance can be digested by the animal. A chemical analysis, he declared, has shown the following percentages for oats:

Dry matter, 70; protein, 78; crude fiber, 20; carbohydrates, 76; fat, 83.

Balancing the Ration.

After having acquired an intelligent conception of the different nutritive substances contained in food stuffs together with the part each plays in building up the various tissues of the animal body in producing power and energy, also the average amounts of these substances and, lastly, their percentage of digestibility, he said the next step was to be able to supply them in such quantity and proportion as will best suit the needs of the animal whether for maintenance, for work of different grades, or for the production of flesh and fat.

He cited several illustrations of how digestible food nutrients may be wasted when a ration is not approximately balanced, both as to material and nutrients. He also illustrated with figures the ratios of dry matter, protein and corbohydrates in corn, timothy, alfalfa, oats and combinations of feed. He said oats are generally conceded to be the food par excellence for the horse or mule since the digestibility of the nutrients happens to be about typically balanced in this cereal. He said oats may be looked upon as an expensive food stuff, if they have to be purchased, and that it is possible to obtain the same amount of nutritive substance in the same nutritive ratio by mixing together other cheaper, palatable and digestible materials which allow the animal the same quantity of digestible nutrients. He cited illustrations to verify his assertion.

He urged that it is not the bulk of the food or the form in which it is most familiar to us that goes to nourish the animal body, but the soluble digestive nutrients contained in it.

In his comment on system in feeding he said in part:

A feeder may have all the information necessary concerning feeding standards, balanced rations, nutritive rations, etc., and yet he can not possibly secure the maximum of good results from the possession of such knowledge unless he employs a rational and intelligent system in the feeding of his animals.

Work horses and mules are living under artificial conditions in respect to their feeding, and are solely at the mercy of the intelligence, or otherwise, of their owners for the manner, or system, in which their food is supplied to them.

Under natural conditions the horse or mule, owing to the requirments, feeds quite often, but partakes of little at a time. The main reason for this is, the relatively small capacity of its stomach—not more, perhaps, than from fourteen to seventeen quarts—the short time it takes for the stomach to empty itself, and hence the necessity for frequent replenishment.

In order to obtain the most satisfactory results, under domestication or during work, it is reasonable to presume that the animal's natural method of feeding should be approximated as closely as practicable, or the amount of food required by the animal in twenty four hours, should be

divided into at least two feeds. Some animals may, and do, become habituated to a lesser number of feeds a day with apparently satisfactory results. However, it is a risky method because, instead of getting as close as practicable to the animal's natural way of feeding, it is getting further away from it.

Many who lose valuable mules from digestive troubles are wont to place the blame on the kind or class of feed the animals have been given; while, in reality, the blame properly belongs to the unnatural and unintelligent manner in which they receive their feed. A properly balanced ration of the very best quality of oats, when fed intelligently and systematically, may not induce a case of colic during the natural lifetime of the animal. However, if the entire day's ration of oats is fed at one time instead of its being divided into three parts, it is liable to so disarrange the digestive apparatus as to set up a fatal case of flatulent colic, because the digestive organs in the horse or mule are not constructed, nor prepared, to "handle" such an excessive quantity of food material all at once. In such a case, are we to blame the oats for the trouble, or the unintelligent manner in which they are fed to the animal? And so it is with other kinds and classes of concentrated feeds; they require system in their administration to prevent indigestion, colic, etc., and to produce the best results in the capacity of the animal for work.

A point of very great importance for the owner or feeder to bear in mind, therefore, is, that an animal's food may be properly balanced as to its digestible nutrients; it may be correct as to quantity and nutritive ration; in fact, be perfect in every particular so far as supplying the needs of the animal is concerned; and yet, if an intelligent system is not employed in the feeding of it, the otherwise perfect requirements may be altogether vitiated.

He said that regularity in work brings regularity in feeding and these two things are greatly conducive to comfort and long years of usefulness. He told of the various grades which should be fed to work horses and thoroughly explained each. In conclusion he declared that it is just as important that a horse's diet contain a variety of food as it is for a man's. No horse, he said, can be at his best if he has but one thing to eat day after day and week after week. While it is true that the horse can be maintained for a short period on oats and hay, he said it seems reasonable that equally good or better results are obtainable and the cost of keeping often lessened by adopting a more extended bill of fare. Experiments with other domestic animals, he declared, plainly show the advantages of a judicious form of combinations of feeding material over any single one.

this in mind. It would seem to me that it would be money well spent to employ one of your most efficient loggers to study the various methods of operation, and to bring before the members of your association the best points of the more efficient operations. I do not know of anything that would be of more real value to the industry than work of this sort. My interest rests more largely with the Southern logging work than with that of any other section, because I am more familiar with it, and I hope some day to have an opportunity to meet you and talk over certain things which I believe would be of mutual interest.

The general discussion at this point was closed and T. B. Mahoney, of Laurel, Miss., read a paper on "Fuel for Logging Locomotives."

That the close proximity to coal and oil supply requires the fuel subject to be worked out on an actual economic basis, was the opinion of Mr. Mahoney, who formerly was with Eastman, Gardiner & Co. High freight rates, he said, with the uncertainty of regular supply, especially during the winter, deserve serious consideration.

He called attention to the use of coal and cited as a concrete daily example the railroad operating as a common carrier and the lumber company hauling nothing but logs on a regular skeleton type of logging car over the same stretch of track; the railroad company using on an average seven tons of coal, costing $21.70 to move 1,800 tons, a distance of 80 miles. The lumber company moves practically the same tonnage 128 miles with 18 cords of wood, costing $18. The lumber company, he said, moves more of its tonnage uphill than the railroad company.

Wood fuel is scattered over the entire belt, alongside any of the logging tracks. To make it available, he said it was necessary to send out crews with teams and tools to gather up and pile the wood along the track, or do this work by the contract. When it is found that there is more fuel on the track than is needed to haul the logs available, the fuel must be handled again, or the engines misdirected. If a forest fire burns it up during the night it adds to cost and fuel delays. If none of these things happened, he said, one occasionally finds engine delays because some engine behind that does not want

Welfare Work in Logging Camps.

The next number on the program was a paper on "Welfare Work in Logging Camps," prepared by N. C. Schlichter, of Charlotte, N. C., secretary of the International Committee, Y. M. C. A., in charge of welfare work among lumbermen. Owing to Mr. Schlichter's absence, Secretary Boyd read the paper, in part, as follows:

All men have a social side that must be cared for. The better the living environment in the camp the more interest men will take in their work.

J. D. Young manager of the Inman-Poulsen Logging Company, of Kelso, Wash., said recently: "We have been devoting our entire attention to the improvement of the machinery in the camps, but we have forgotten very largely the improvement of the men." I suppose this has been generally true in all industries as well as in the lumber business. It is time to change things wherever possible, and changes of this kind pay, and pay big.

Welfare work centers about three great human interests: health, education, pleasure.

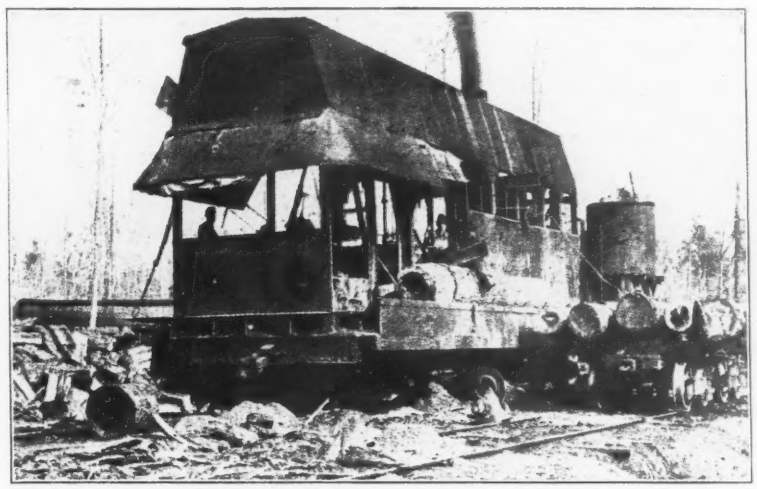
On the first of the points mentioned Mr. Schlichter urged screening and general sanitation of closets, referring to the danger otherwise of typhoid fever, and suggested the deliberate cooking of meals for workmen instead of allowing their own hasty preparation of food, and urged under the same head the preventing of accidents, recommending also health talks, especially to the colored help. In this connection he said:

It is well to ask also if our doctors are being given proper equipment for much of their work. In a big mill center the other day a doctor said to me: "We need an operating room here in the worst way for emergency cases." Many other places need such equipment. What a saving this would mean in quick recovery, in suffering, in accident claims, and what an asset in the increased good will of the workmen. A book called "Safety," by W. H. Tolman, just published, is of great value to all employers of labor.

Bathing is of such direct relation to health that no camp should be without facilities of some kind for this purpose.

The address especially emphasized the need of education, Mr. Schlichter recommending adequate facilities in school houses, their equipment, proper supply of books, magazines, a good talking machine for each, and said: "With such equipment as sug-

C. P. MEYER, HOUSTON, TEX.;
Assistant General Manager Kirby Lumber Company.



HOME MADE DEVICE FOR SAWING WOOD FOR LOCOMOTIVE FUEL.

R. LEE BASS, GLENMORA, LA.;
Logging Superintendent Louisiana Sawmill Company.

Discussion.

One superintendent in discussing the feed question said that he fed 23 pounds of oats and 17 pounds of hay to each mule daily, but that the mules were fed in an open corral.

Mr. Baker advocated separate feeding of stock in order that each animal might get his proper share. He said also that he understood that the Federal government's standard for feed was for a 1,400-pound mule 18 pounds of oats and 8 pounds of roughage daily.

Les pedeza hay was shown to be increasing in favor as a feed for work stock. One operator is raising his oats and his les pedeza hay, saving in a single year $400 on his oats expense and producing the hay at about $5 a ton as compared with from $20 to $28 a ton for timothy. It was shown that many concerns had land fit for cultivating grain.

Feed used commonly was oats and timothy hay. Some, however, were using prepared feeds and many were feeding alfalfa hay with success.

President Baker suggested the importance of considering the food content of the various grains in estimating their relative values, dealing with proteins, carbohydrates etc., rather than with oats, hay, corn etc.

Standardizing Logging Methods.

Secretary Boyd at this stage read a letter in part as follows from Prof. R. C. Bryant, of Yale Forest School, on the standardizing of logging methods:

I have traveled over the greater part of the South during the last seven or eight years, and have visited a good many operations. One thing that strongly impressed me in the logging work has been the lack of standardization of logging methods, even where operators were working under conditions that were very similar. I have always felt that the Southern logger knows too little about what his neighbor is doing, and for several years I have advocated in a quiet way amongst my friends in the South who are engaged in the lumber business the advisability of sending their logging superintendents around to visit operations of at least the companies in their vicinity.

I believe that your association can do a great work by attacking the problem of standardizing methods of operation in the South. It is possible that you already have wood is waiting on some engine ahead taking fuel, and no matter how efficient the train movement, this will occur.

To overcome these difficulties, he said an engine has been devised consisting of a boiler, small hoisting engine, drag, saw and splitter, all mounted on a flat-car 12 by 40 feet. Cull logs are loaded on cars and brought alongside, where they are cut and split into 2-foot lengths. This machine is located at the concentration point and all the unpleasant features of wood fuel are thus eliminated. This machine and crew will turn out 40 cords of wood a day, and after skidding and loading are added the cost is well below $1 a cord.

The speaker declared that the damage by fire set by wood-using locomotives is no greater than with the coal burner, as the former is equipped with the Radley & Hunter stack, which can not be rated high for artistic beauty, but, nevertheless, is very efficient.

Another feature which should appeal to wood fuel and lumber operation, the speaker said, is the present effort to crystallize public opinion on the conservation of raw material. He asked why a lumberman will buy coal that is mined far from the base of his operation by a laborer from whom he or his community realize nothing and from which the coal operator must make a profit, when right at hand he had the greatest heat producer in the fuel world at the lowest cost per unit.

Following the reading of Mr. Mahoney's paper a query brought out the fact that eight superintendents were burning coal exclusively, and seventeen were burning wood exclusively. Others were burning part of each. Inquiries regarding the costs of wood showed a wide range, but it was shown also that to the estimating of prices little attention was given to the standard cord as a standard of measurement.

Mr. Mahoney said that he was accustomed to use for fuel everything left in the woods. In some operations, however, where everything is sent to the mill, little is left for fuel.

gested the school teachers would find a very interesting general line of work to do."

Mr. Schlichter considered recreation a matter of great importance as affecting working conditions and offered suggestions on the observance of holidays, providing and superintending games, etc., and offered the coöperation of the Industrial Department of the International Committee of the Y. M. C. A. along this line, as along any proposed line of welfare work, giving the address of that department as at Charlotte, N. C.

Mr. Schlichter quoted the Hon. J. B. White, of Kansas City, Mo., as saying on this subject: "Human life is our greatest asset and its waste is a permanent loss. * * * We want to increase the ratio of the value of the man to the soil, of man to all and any of his products, of man to money, and to put man first all the time."

Building Logging Cars.

The construction of logging cars proved to be a subject in which many superintendents were greatly interested. One member said he had suffered four very serious wrecks from the breaking of log reaches ("roosters"), and he asked for advice.

On the question being put to the convention a majority of the members favored the use of cars built on a standard basis with 24-foot bunk centers and with reaches between link and pin drawheads, the reaches made of round poles reinforced with iron. This is for use with long logs. A great many superintendents are using these reaches with success.

At the conclusion of the discussion of logging car construction the session adjourned.

TUESDAY AFTERNOON.

The concluding session of the convention was opened at 2 p. m. with a discussion of the use of steam skidders. In this discussion several speakers emphasized the importance of close cooperation between the sales office and the logging superintendent.

V. C. Langley suggested that the sales manager himself ought to get into the woods and find out occasionally what kind of timber will be logged for six weeks following his visit.

J. B. Work asked how many superintendents received daily lists of orders showing the kind of stock wanted. Only one superintendent received daily reports, a few received weekly and a considerable number monthly reports.

President Baker asked how many received orders for bill stock, and, of course, all received such special orders. The president then asked how many were in the habit of cutting special stock 50 percent in excess of the orders received. Nobody was willing to admit having done so, but the laughter that greeted the question suggested that perhaps a few may have been guilty of indiscretions in cutting bill stock.

When a discussion of hight at which stump should be cut was started the fact was disclosed that this subject is receiving more and more attention from operators. The hight varied from 18 to 30 inches, pine operators varying the hight when the trees had been cupped or boxed for turpentining.

Use of Steam Skidders.

One superintendent said that for a while he used a two-line skidder, but as he was not getting enough logs he put on a rehaul. This reduced his skidding expense 12 cents a thousand. He uses the rehaul in scattered as well as in thick timber and he cuts everything in the woods and sends it to the mill; he averages 250 logs to the line and uses eleven men, including the skidder foreman. He uses one line on each side of the skidder, but if one gets cleaned out first he switches both to one side, requiring only seven minutes to change a line and get ready for skidding.

Another very successful superintendent who uses a four-line rehaul said that the secret of successful skidding is largely in the setting. About twenty minutes is the average time he requires. He pulls about 650 logs to each machine, the logs being from 32 to 54 feet long, six logs to the thousand feet and 12,000 feet to the acre. He skids everything to the track where the culling is done and rejected stuff left. Scaling is done at the loader. Heart ties are made of rejected logs. The skidder skids about 40 percent more than the loader can load, so he puts both to work when the loader catches up. He sets his lines 80 feet apart, moves twice a day and pulls 660 feet.

The length of service of wire rope was discussed, one operator saying that if he did not get 10,000,000 feet from a line he was sure it had been abused. He uses an 800-foot line with a swivel and socket at the tongs. He used a power rehaul two days, but returned to the use of horses. His horses weigh about 1,400 pounds and he uses three horses to the line, changing every half hour, thus alternating an hour's rest with a half-hour's work. This superintendent had a four-line skidder, but uses only two lines, working ten men, including the foreman. Each line handles from 40,000 to 45,000 feet a day of 22- to 38-foot logs running 10,000 feet to the acre.

Track Laying.

Track laying came up for considerable discussion. In general the tendency seems to be toward the use of heavier steel. The weights mentioned, however, varied from 35-pound on spurs to 60-pound on main line track. The average steel gang takes up and puts down from three to six rails per man per day. Steel gangs generally numbered about fourteen men and the rate of pay seemed to be fairly uniform.

Raising Vegetables and Grain.

As C. C. Curry was ill Monday and unable to be present, he was asked today to tell about feeding his workmen. Mr. Curry dwelt somewhat in detail upon his methods and costs, but one point of special interest and importance that he brought out was that of raising vegetables and grain on cut-over land.

He said that he uses some of his men around the camp, barn men and others to do the garden work, raising peas, beans, cabbage and potatoes. He raises chickens also. In raising potatoes he gets two crops a year. The garden spot is cleared the first thing when a camp is started.

J. N. Ward submitted in detail his costs of feeding his workmen and the subject was discussed at considerable length. The consensus was that good food properly served is about the best investment that can be made in a camp. Special emphasis was laid on pie, many declaring that if pie is served the men will overlook a great many other shortcomings. T. B. Mahoney said that the large place that New England people have in history is due to the pie they always have had.

Officers Elected.

The report of the nominating committee being called for at this stage, Oscar Marsan reported for the committee the following nominations:

President—J. B. Baker, Hodge, La., Huie-Hodge Lumber Co.

First vice president—C. P. Meyer, Houston, Tex., Kirby Lumber Co.

Second vice president—Oscar Marsan, Clio, La., Opdenweyer-Alcus Cypress Co.

State Vice Presidents.

Alabama—C. C. Curry, Vredenburgh, Ala., Vredenburgh Sawmill Co.
Arkansas—L. R. Wilcoxen, Crossett, Ark., Crossett Lumber Co.
Florida—S. Rigell, Florala, Ala., J. S. Betts Company.
Georgia—J. P. Work, Lumber City, Ga., Ocmulgee River Lumber Co.
Louisiana—R. Lee Bass, Glenmora, La., Louisiana Sawmill Co.
Mississippi—V. C. Langley, Laurel, Miss., Wausau-Southern Lumber Co.
Texas—D. W. Pennington, Groveton, Tex., Trinity County Lumber Co.
North Carolina, South Carolina and Virginia—Bowman Marshall, Newbern, N. C., John L. Roper Lumber Co.

On motion the report of the nominating committee was adopted as read.

The last subject considered on the program was the change of date of the annual meeting. On being presented in the form of a motion the convention unanimously voted to change the date from the week of September 25 to 30, as at present, to one month later, October 25 to 30. This does not fix the days on which the meeting shall be held, but provides only that it shall be held between the dates mentioned.

The convention then adjourned.

ASSUMES GREATER RESPONSIBILITIES.

Manager of Mills and Logging Becomes Assistant to General Manager —C. P. Meyer Promoted.

C. P. Meyer, of Houston, Tex., who was on September 24 made assistant to General Manager B. F. Bonner, of the Kirby Lumber Company, brought to the convention twelve of his logging superintendents. Mr. Meyer has from the beginning of the Southern Logging Association been one of its most faithful members, being first vice president of the organization, attending all its meetings and taking an active part in its discussions.

The opinion Mr. Meyer holds regarding the value of the association to the logging superintendent is evidenced by his bringing so many of his men with him. But for the recent heavy rains which have demoralized logging operations in some sections Mr. Meyer would have brought twenty-five of his men to the meeting.

Mr. Meyer's promotion was announced in a general order sent out from the headquarters of the Kirby Lumber Company, Houston, Tex., under date of September 24, signed by B. F. Bonner, vice president and general manager, and approved by John H. Kirby, president. The order read as follows:

"Effective this date the position of manager of mills and logging is abolished and C. P. Meyer is appointed assistant general manager, with headquarters in Houston. In addition to his new duties he will continue in charge of operations as heretofore."

This promotion is a well-deserved recognition of long and faithful service by a competent man. Mr. Meyer is yet a young man, but is considered one of the best mill and logging operators in the South. His service under John H. Kirby dates back to 1894, at which time he took charge at Silsbee, Tex., of the shops and machinery of the Texas Pine Land Association, a company composed principally of Boston capitalists who had been induced by Mr. Kirby to make large investments in the pine lands of eastern Texas. One year later, in 1895, Mr. Meyer entered the company's mill at Silsbee as saw filer, having charge of the filing department until the mill was leased three years later to the Industrial Lumber Company. He then resumed his former position as manager of the shops and machinery of the company, continuing in that position until 1901. In October, 1901, John Henry Kirby, having practically completed the plans by which the Kirby Lumber Company was organized, and purchased a number of the more important East Texas mills, Mr. Meyer took charge of and started the Silsbee mill, preparatory to the taking over of the other mills purchased by the Kirby Lumber Company on the 1st of the following January.

After the mill started he took the position of filer and manager of rolling stock, remaining there until May, 1902, when he was placed in charge of the Silsbee and Lillard mills as manager. He remained in that position until 1905, when in June of that year he was transferred to Mobile, Tex., to reconstruct and start in operation the mill at that place, which had been taken over by the company, and which had been idle for a number of years. Within six months he had accomplished this task satisfactorily, the mill was in good shape and running smoothly, and in October, 1905, he was made manager of the Bess May mill, this being the largest and most modern mill in the South at that time and the best of the plants owned by the Kirby Lumber Company. Here he remained until May, 1906, when the death of F. M. Aldridge made vacant the position of manager of mills and logging, and Mr. Meyer was elevated to that important post. For six years he has had charge of operations of the company, and through his accurate knowledge of every phase of the business and his energetic, up-to-date methods has succeeded in bringing the great organization up to the highest possible stage of efficiency in every department. The necessity for some of the burdens of the general managership of this vast enterprise to be lifted from the shoulders of Mr. Bonner resulted in the selection by Mr. Kirby and Mr. Bonner of Mr. Meyer as assistant general manager, and in future his duties will be more of an executive nature than they have been before.

Having a corps of trained assistants in the operating department, the advancement of Mr. Meyer to the position of assistant general manager has resulted in the abolition of the office of manager of mills and logging, which operations will continue to be under his direction.

For the last three years Mr. Meyer has held the office of vice president of the Southern Loggers' Association, and largely through his efforts has this organization been made so valuable to logging superintendents in the South in helping them to solve the many difficult problems they encounter and in showing them how to conduct their operations in the most efficient manner and at the lowest possible cost.

Mr. Meyer has many friends in the lumber trade, all of whom are extending congratulations upon his well-deserved promotion.

LOGGING SUPERINTENDENTS IN ATTENDANCE AT FOURTH ANNUAL CONVENTION SOUTHERN LOGGING ASSOCIATION, GRUNEWALD HOTEL, NEW ORLEANS, LA., SEPTEMBER 29-30, 1913.

FIFTH PACIFIC LOGGING CONGRESS.

Conference Indicates Progress in Forest Engineering—Problems of Woods Work Treated Exhaustively—Addresses and Debates Show Marked Advances in Solving Loggers' Difficulties—Future Problems Outlined.

SPOKANE, WASH., Sept. 27.—If one had not attended the four previous congresses, one could not have dreamed that there is any branch of the lumber industry that could develop so much earnest study and attention to technical matters as has been shown by the addresses and discussions of the fifth annual Pacific Logging Congress, that closed its two days' deliberations here with the junket to the Potlatch Lumber Company's operations, ending with the return to Spokane tonight of the special train of eight Pullman cars and observation car, on which the trip was made.

More and more are these annual gatherings resulting in technical and scientific presentations of the practical progress being made from year to year in the logging industry. Not only the technical but the human side is also coming in for consideration by these practical men who are supposed to gage everything they do in a business way by the query, "Will it pay?" Strange as it may seem, they find the answer is that it does pay from the standpoint of dollars and cents as well as from that broader standpoint of humanity.

Better methods of logging and better workmen both tend toward economy of operation and the two days' deliberations brought out many excellent thoughts and showed the results of the progress made in logging engineering during the last year. At the outset, great stress was laid upon the necessity of having many papers presented by practical men familiar with the topics assigned to them that there might be

E. P. BLAKE, OF SEATTLE, WASH.:
Retiring President.

created some literature dealing with the logging industry. This need has now been met and, as at previous congresses, the only criticism that could be made of any moment was that the presenting of papers—and most excellent ones they were—took up all the time, and more, too, as it was not possible to find the time to present some of them, and there was practically no time left for discussions. It is likely that another year will find the plan of the congress changed a little more along the lines of engineering societies, where there are but few papers and much discussion. This but indicates the evolution of the congress along practical lines.

Commendable Features.

A commendable feature that was lacking this year was the exposition of mechanical and engineering devices and supplies that was tried at last year's congress at Tacoma and was a marked success, though because being located in the same hall as the congress it resulted in noise that disturbed the deliberations and also kept some people from the sessions. It is likely that if the exhibits are again made a feature of the congress, as seems probable, they will be housed far enough away as to not interfere with the congress, and be closed during the business sessions. That there was marked interest manifest in the deliberations of the congress was evidenced by the fact that over 300 men sat for hours listening to the addresses with scarcely one leaving the hall of the congress at any time.

Much credit is due George M. Cornwall, of Portland, Ore., the secretary and founder of the congress, for the success that it has become. That it is appreciated is indicated by the many words of commendation heard on all sides. The retiring, at his own wish, of E. P. Blake, of Seattle, as president marks the passing of an efficient official and a pleasing presiding officer and the choosing of J. J. Donovan, vice president of the Bloedel Donovan Lumber Mills, Bellingham, Wash., as president, indicates that the congress will continue to have at its head an able executive, one who is not only practical but a trained engineer as well.

Excellent progress was made the last year along the line of securing training in western State educational institutions of learning that will tend to fit young men for the vocation of a logger, and during the coming year this movement, which originated from a suggestion of M. H. Dickinson, of Seattle, western manager of the Lidgerwood Manufacturing Company, pioneer producer of overhead logging systems, made in the columns of the AMERICAN LUMBERMAN several years ago, and which was taken up by the Pacific Logging Congress with commendable foresight and pushed to what now seems to be a successful conclusion. Although several western universities are now offering courses in logging engineering, they are not yet as they should be, and as will be observed by a perusal of the proceedings in the pages following, especially of the able presentation of the matter by James O'Hearne, and the discussions by Dr. C. A. Schenck, and representatives of most of the western State universities, there is still a great difference of opinion as to how the logging engineering training shall be carried out. But progress has been made and that is a great deal.

Welfare Work Considered.

That the welfare of the men who work with their hands—the rough and ready lumberjacks—is being considered, no matter what the motive, shows advancement along humanitarian lines as well as a desire to bring about greater efficiency by developing a higher class of workmen. A number of the larger operators have introduced with success profit sharing with their employees, and others have established welfare clubs at their camps, under Young Men's Christian Association auspices, and are pleased with the result. This feature of the congress received much consideration both through addresses and discussions on profit sharing, and the address of an eminent physician treating of the physical care of the logger, and the welfare dinner under Young Men's Christian Association auspices at which the moral needs of the lumberjack were brought to mind.

The trip to the operations of the Potlatch Lumber Company fortunately afforded an opportunity to witness the progress that has been made in utilizing mill waste in generating electricity and the transmission of this electrical power several miles to the forest, where it operated donkey engines engaged in logging. As much value as almost everything else is the mixing up of between three and four hundred practical men engaged in the same occupation and the exchanging helpful ideas. This is not the least of the benefits that the logging congress brings to those who attend.

This year's congress was staged among ideal settings. It was held in the big pavilion in Spokane's most beautiful park, with tall pine trees casting their shadows across the doorway, through which came the fragrance of beautiful flowers, and at noon the lunch was spread on long tables beneath the trees in the open, and it consisted of the fare the logger likes.

OPENING SESSION.

The fifth annual Pacific Logging Congress was auspiciously opened Wednesday evening at 8 o'clock in the Moorish room of the Hotel Spokane. It had previously been arranged that in the absence of President E. P. Blake, of Seattle, the meeting would be presided over by the eloquent representative of a race of orators, J. J. Donovan, of the Bloedel-Donovan Lumber Mills, Bellingham, Wash., whose name betrays his nationality, his politics and his religion. The meeting was an informal one for the transaction of some routine business and the reading of the reports of the officers of the association.

From the start it was seen that the Scotch were not to be overlooked in this congress and H. M. Strathern, of Post Falls, Idaho, made an address of welcome to those who attended the early congresses and who were present for the opening meeting. Mr. Strathern, as one of the active members of the local entertainment committee, in his characteristic way, for which he has a reputation all over the Pacific coast, impressed it on all of the visitors that they were very much welcome and that Spokane was going to leave nothing undone to make their stay as pleasant as possible.

Secretary George M. Cornwall read a telegram from President Blake expressing his regret at not being able to attend and hoping that the fifth annual session would be the most successful congress yet held. Mr. Cornwall then read President Blake's address.

President's Address.

President E. P. Blake, of Seattle, Wash., in his annual address said he could not refrain from congratulating the congress upon its good fortune in having the stage settings for this convention so delightfully complete, indicating, he said, that the hosts have fully grasped the significance of these yearly gatherings.

Continuing he said:

It is not necessary again to define the attitude of this organization or reiterate the purpose for which it was created. You all know now that it has, and always has had, a definite, clearly defined object to attain, and I believe the time is ripe for this body to put itself on record in an unmistakable manner.

As a concrete body this organization, up to this date, has done little beyond lending its moral support to a purpose that has awakened widespread intelligent interest.

If this purpose is worthy of an annual expression of opinion, it is worthy of something more, and the "something more" will never come from any initiative that does not originate right here; in other words, with us. What are you going to do about it? We have talked all round this question for the last four years, and beyond "leave to print" have not gotten further into the record. A lot of time, a lot of money has been spent to get as far as we have, and if the idea has been worth its cost to date the purpose is worth far more. Further than this, if we hope to realize upon the investment to date, something must be done to start the purpose definitely on its way to ultimate fruition. The seed has been planted. Now the soil must be fructified.

All of the States on the western fringe of this great country are new, having a comparatively sparse population,

J. J. DONOVAN, OF BELLINGHAM, WASH.:
Newly Elected President.

and laboring under the customary burdens of early development. Their colleges are new, are not heavily endowed nor likely to be in the near future. Their sources of revenue for maintenance are more or less of political origin, and difficulty has been encountered when the financial phases were reached in the effort to inject into the curriculum a course covering a new science. A spirit of friendly coöperation has been met, but—and we may as well come to the point—adequate financial provision for maintaining this new course seems to be far from certain.

Our colleges are equipped and financed to handle the accepted sciences. Comes something new, and, although of recognized merit among the educators, it has not, as yet, awakened a demand from the political public. While I agree with the contention that it should be handled by State and national aid, and undoubtedly will be, in time, still if you want the benefits quickly, if you want them during your and my participation in the lumbering game, it seems certain that you will have to demonstrate that an emergency exists, and to do this seems to open up one avenue and that is temporarily to finance the course in one or more colleges selected for the experiment and until such time as the State legislatures shall come to realize that one of the greatest assets of any commonwealth lies in the trained minds of young men capable of developing the great industries upon which their wealth and progress are dependent.

We need those trained minds now. The State needs them now, and would have them if the public at large only knew, but until that time comes it looks as if the only way in which we can get them now is through individual effort.

Some day popular clamor will demand just such young men as we now think the public needs, and, if this congress has the courage of its convictions upon this point, it will not adjourn until definite steps have been taken to endow at least one chair devoted to the science of forest engineering.

A great deal of valuable time, a great deal of thought, and an incalculable amount of energy have been devoted to this project during the last four years by men whose very earnestness bespoke the unselfishness of big minds engaged in big things. The project, the cause, is worthy of this effort not alone for its own intrinsic merit, not because of your present crying need for it (and you never needed it more), not because it would be a direct benefit to your business and my business, not because it is a helpless infant for which you each and all stood as godfather at its birth—not

because of any of these things, any one of which, however, is ample justification, but because first, of the force, energy and life-devotion which the man who conceived it has dedicated to it, and second, because you owe some return to the State and Nation that have protected you in the use of opportunities that have brought to you the comforts and enjoyments of life and in many instances wealth, position and the ability to do big meritorious things.

This latter obligation may, I am aware, be open to some argument, but there can be no argument as against the obligation you owe to George M. Cornwall for the tireless, disinterested, never-ceasing efforts he has put forth to advantage-your personal interests, and to discover to you new methods and ways for advancing a great, profitable industry; and the great cause which he has fathered, without self-thought, that of creating opportunity, and all that goes with opportunity for your son, and my son, in a cause that must win, and you must make it win.

You will be recreant to good faith if you fail in this, and so I say and I earnestly plead with you not to permit this congress to adjourn without its having first gone on record as having taken some step, or having pledged itself to take the requisite and necessary steps, to make sure the establishment of, at least one chair devoted to the science of forest engineering, in some college within the borders of this great western Empire in which we are privileged to enjoy far more advantages than the average of mankind.

I thank you for your indulgence, gentlemen, and now declare the fifth session of the Pacific Logging Congress formally opened.

Mr. Donovan took the occasion to call attention to the good work that has been done by Mr. Blake in making the logging congresses successful, in educating the loggers and creating a fraternal feeling among them, thus facilitating the exchange of ideas and making it possible for one to profit by the mistakes of another.

Vice President's Address.

The secretary then read the address of H. C. Clair, vice president of the congress. It follows:

During the past few years that this logging congress has been in existence many subjects have been ably handled and matters of great interest will be discussed by gentlemen who are well versed in their respective lines. Your time will be better occupied than in listening to any address your vice president might make and I will not burden you with anything more than a few words of kindly greeting. In my native State of Oregon statistics show that of the entire number of people engaged in all the manufacturing in the State over 52 percent are workers in the lumber business. About the same percentages apply in Washington and Idaho

H. C. CLAIR, OF PORTLAND, ORE.:
Retiring Vice President.

and you are the captains who command the great army of men who produce the raw material in the log.

Could you double your crews in the woods at once and keep them at work continuously, such prosperity would spring up on the Pacific coast as has never been known before. Should you withdraw all your men from the woods for six months such a business depression would result as to ruin a large percentage of the business houses of the Coast. I merely speak of these things to draw your attention to the size of the industry, almost all of which has sprung up during the last fifteen years.

Development has been very rapid and improved methods have been forced upon you so fast that it has been almost beyond the ability of men not favored with wonderful mechanical genius to comprehend and utilize the new methods that have been thrust upon them. The advantages of gathering once a year to talk over with one another the various phases of your business and perhaps get straightened out on some trouble that has caused you many sleepless nights is of great value.

The old adage that "all work and no play makes Jack a dull boy" applies just as much to a lumberjack as to any one and it is certainly a good thing to get out of the woods once in a while and enjoy the entertainment such as we are sure is in store for us on these occasions. I am sure you will all have a good time during every minute of your stay in this beautiful city of Spokane with its good people all so ready to entertain you.

Secretary's Address.

Secretary George M. Cornwall, of Portland, Ore., gave a lengthy resumé of the work of the last year, telling of the scope covered by the Pacific Logging Congress and characterized it as an international body. To show that its workings are of interest to loggers outside of the United States and Dominion of Canada he read a number of letters from widely separated points in the Old World asking for a detailed report of last year's meeting.

Mr. Cornwall told of the influence lent by the congress to support the principles of workmen's compensation within its territory. He briefly described the compensation laws in California, Oregon, Idaho, Montana and British Columbia and the benefits derived from each. The secretary's report told of the various subjects to be discussed during this session and declared it had been the aim of those responsible for working out the program to cover the ground as thoroughly as possible and get speakers who thoroughly understood the subjects to be advanced.

In conclusion Mr. Cornwall said that during the last year interest in the Pacific Logging Congress has been kept alive through correspondence and personal visits from the secretary and through the generous space accorded by the trade and public press by articles calculated to advance the cause of logging engineering. The achievements of the congress, he said, however modest, have been with an eye single to the uplift of the logging industry.

The treasurer's report, read by Assistant Secretary-Treasurer David Davis, of Portland, showed a total of $3,948.29 receivd during the year ended September 15, 1913, and with a total cash expended during the year of $3,085.15 this left a balance on September 15 of $863.14.

The preliminary work of the Congress thus being disposed of, the opening session adjourned and the officers of the Congress were in a position to begin the morning session of the following day with the consideration of the interesting program of addresses that had been arranged.

THURSDAY MORNING SESSION.

The Thursday morning session was called to order in the large dance pavilion at Natatorium Park at 10:15 by Vice President H. C. Clair, who announced with many expressions of regret that President E. P. Blake was unable to attend. Mr. Clair then introduced J. J. Donovan, of Bellingham, who presided.

Mr. Donovan said he was the victim of a dire conspiracy between Messrs. Clair, Cornwall and Blake. He had received two wires asking him to come to the congress early and "tend hook" temporarily and they had then forced him to act as presiding officer. He was overjoyed when the daily press in reporting the opening session Wednesday night spoke of him as Mr. Blake and he had hoped to be able to keep up the disguise, but Mr. Clair had now spoiled that by introducing him.

Before proceeding with the regular program Mr. Clair

T. P. JONES,
Superintendent of Logging,
Potlatch Lumber Company.

A. W. LAIRD,
General Manager,
Potlatch Lumber Company.

announced that the Pacific Loggers' Association would hold a meeting at Davenport's cafe immediately after the Y. M. C. A. "welfare dinner."

On account of the modesty of T. P. Jones, Potlatch, Idaho, who had the first paper on the program, his paper was read by the secretary. He intimated that the millennium is here when, at the opening of his address dealing with his experience with a cable tramroad, he declared: "There is nothing new under the sun." He gave it as his opinion that all mechanical principles have been exploited and defied the inventive mind to produce new principles. He declared it was simply a question of applying old principles to certain definite conditions. He then outlined briefly the results which have been obtained by the Potlatch Lumber Company in the operation of an endless cable tramway, with which he has had more or less to do. The holdings of the Potlatch Lumber Company, he said, cover a large area; the natural contour of the country is broken and precipitous. Elevations of 2,000 feet are not uncommon. The stand per acre averages 20,000 feet and the company logs this down to 6-inch tops. The timber consists of Idaho white pine, western white pine, larch, spruce, fir, Douglas fir and cedar.

Certain conditions arose which drove the company to seek new methods in logging. Investigation was made in various parts of the country and the evolution of the ground-yarding system into use of the skyline system for the rugged, rough country was undertaken. This he described as follows:

Briefly, this system consisted of an ordinary two-drum donkey, to which a third drum was added, using the main drum for a standing line; the haulback drum utilized as a haulback; while the third was used as hauling-in drum. This line was supported on 9-inch poles at intervals, dependent upon conditions, from 500 to 2,000 feet. On this line was mounted a very simple two-wheeled carriage. From this carriage we ran out a line about 100 feet on each side. Loads of 500 to 2,000 feet were embraced in an ordinary choker, drawn up to the trolley through an 8- to 10-inch block on the carriage, and then hauled in with the pulling or main line drum. The lines were main or standing 1⅛ to 1¼-inch of ordinary hemp core line. The other lines were ⅞ to ¾-inch, of ordinary 6-19 strand.

The daily capacity of a rig of this type was a little better than that of the ordinary ground yarder on fairly level ground. We worked this system in very rough country, where it would have been practically impossible to operate a ground yarding system. Hence we felt rather encouraged with our experiment. But we soon found that to go back 3,000 to 3,500 feet or farther we were losing too much time in carriage momentum. This caused us to look around for some other plan which would enable us to cover a larger area of country, where railroad building was prohibitive, and to avoid relaying or tandem yarding. This development was reached in 1911.

He then told of the transmission of the cable tramway and also to a rollway. Encouraged with the success of the first venture he said the company decided to take a further step, which resulted in a device by which curves could be negotiated, and produced blue prints that those who wished might get a definite understanding of the device. He then told briefly of the cost of construction; the distance between supports, its adaptability to heavy timber and of the number of transfer stations required. In conclusion he said it might seem rather amusing to state how certain difficulties were anticipated and overcome in the building of the tramway. Every logger, like a soldier, has to devise some scheme to help him in a hard pinch, which is sure to come. The problem which required much thought, he said, was how to release a unit load of logs suspended in the air, perhaps 80 feet, and if by chance one end of the chocker should come lose, leaving the load dangling in the air, the danger which would be wrought to the line would at once appeal to every logger. Several plans were conceived to overcome this difficulty, and it finally dawned upon one of his men that the trigger or toggle link, which held the log, could be released by a rifle shot. This solved the problem. The company's foreman, he said, is a crack shot and can be seen every day pacing up and down the line carrying his rifle. In order to make a better target the company has welded a lug on a toggle link, which not only provides

L. T. HAYS, OF SAN FRANCISCO, CAL.
U. S. Steel Products Company.

a better mark for the "gunner" but also makes it easier to release with a peavy at the landing.

Because of the late start of the session, discussion of papers was practically abandoned and an attempt was made to catch up with the schedule. The Chair introduced L. T. Hays, tramway engineer of the United States Steel Products Company, San Francisco, who he said would tell of the advances made in European countries in the use of cableways.

Mr. Hays spoke on the "European Logging Tramways of the Bleichert System," explaining the aerial tramways and their application to the logging industry. He told of the origin of the aerial systems and showed a number of photographs to illustrate certain points about them. In his opinion logging tramways are necessary and of the installation costs he said:

It is very difficult to get a set of installation cost figures that will meet general conditions, because you can readily understand that an equipment specially designed to handle comparatively small timber would hardly meet the requirements of the big timber on the Pacific coast of the American continent; then, too, the contours of the country over which the logging tramway would operate would vary considerably, thus varying the number, as well as heights, of the intermediate towers and stations. The terminal requirements differ radically according to the topography of the country and the demands of the operators; sometimes steel towers and terminals are desirable and even necessary in timbered districts; therefore, specific figures in this connection would often be misleading, as aerial tramways completely installed and operating have cost from $1 to $10 per foot of length. Thus, it is obvious that each separate installation must be considered individually, and special designs made to meet the exigencies of the problem under consideration.

The American logger has not as yet paid much attention to aerial logging tramways, but it seems safe to predict that numerous installations will be made on this continent during the next few years, because logging costs are rapidly increasing as operations are carried farther back from the main lines of the railroads, thus making some change in transportation methods imperative.

R. W. Vinnedge, of the North Bend Lumber Company, North Bend, Wash., was the next man on the program. Before reading his address he said that he had no machinery or anything of the kind to sell and was not trying to exploit his system of logging. He also ac-

knowledged credit due the Lidgerwood, MacFarlane and other overhead systems, saying that in his system he had blended several of the principles of those systems with some original ideas.

"With the passing of the timber supply on low levels, lumbermen are confronted with the problem of producing logs from smaller timber on the higher levels and at a greater distance from the axis," declared Mr. Vinnedge, at the opening of his address, entitled "A Composite Flying Machine." To do this he said the necessity for new methods became patent. He declared the different stages of evolution by which the lumber industry of this country is evidenced are epochal; each era revealing circumstances and conditions peculiar to itself; each succeeding era presenting problems which are new but none the less insistent.

Continuing, and using photographs to illustrate some phases of his address, he said:

I believe we are today in the yarding epoch. The advent of the overhead cableway is to my mind a solution of the yarding problem. While overhead logging methods have been employed in one way or another for the last ten years, it has not been seriously considered and extensively utilized in the Northwest until within the last four or five years. In this short space of time it has passed from the crude, erratic, good-today-bad-tomorrow stage which marked the genesis and experimentation period to the efficient, dependable, run-every-day-article whose output may be estimated with some degree of accuracy.

And in the transition we have eliminated the necessity for an endless shifting of chokers and pulling of line to permit perhaps one, and seldom over two, logs to bore a tortuous passage through acres of stumps and debris, causing the lumberjack, like Job, to curse the day he was born.

Instead, there has been substituted a method which makes it possible by a trifle more initial expense and preparation to pick up not one log but many times half a dozen logs where they lie in the woods and transport them to the landing with seldom a stop after the go-ahead whistle.

In contemplating this method of ours we bore in mind the desirability of two features; namely, simplicity and economy of installation. Accordingly, we have worked out our method using as the propelling force an ordinary two drum 11x13 Willamette yarder with a straw drum.

Any operation supplied with the ordinary donkey engines and rigging may become fully equipped for aerial logging with an expenditure of not to exceed $1,500.

The Aerial Line.

The aerial or carriage line is permanently suspended from a spar tree at the landing to a tail tree at the back. This line consists of 1,500 feet of 1¼ or 1⅝-inch "Yellow Strand" wire, varying in diameter with the size of timber to be logged. In this connection will say that we believe 1¼-inch diameter wire is sufficient for timber scaling 2,000 feet, and from 2,000 feet to 4,000 feet 1⅝-inch diameter. An advantage in using the smaller diameter line is that it may be converted into chokers after it has become worn somewhat and rendered unsafe for overhead use. One end of this line is first made fast to a stump or tree directly in rear of the tail tree, the other end passing through bull blocks hung in the tail and spar trees respectively, and tightened by means of a block and line used for this purpose only. This tightening line is only 350 feet in length, and is made fast to two stumps, passing through a block attached to the end of the aerial line, thus involving two anchors rather than one.

We find that while it is practicable to operate a distance of 1,500 feet the best results are nevertheless obtained at approximately 1,000 feet, especially after a crew of men become familiar with the method of changing from one tail tree to another, which minimizes delay.

We find it economical to yard logs lying from 150 feet to 200 feet on either side of the aerial line. Farther than this the strain on equipment due to the logs lodging behind stumps and the resulting danger of uprooting the tail tree are features which overbalance the slight gain in additional territory covered at one setting.

Other Wire Used.

Fifteen hundred feet of 1⅛-inch line is carried on the main drum as a yarding line, 3,000 feet 9/16-inch for haulback purpose, and 2,500 feet of ⅝-inch straw line.

The spar tree is reinforced with six 1⅛-inch guy wires each from 200 to 400 feet long, while the tail tree has only one guy line other than the aerial line, which forms a support in itself.

The Carriage.

The carriage is constructed of ⅝-inch boiler plate reinforced with 1-inch straps and includes three 5x14 manganese sheaves; two of which operate on the aerial line. The third sheave, while at times not used, was originally intended to accommodate the yarding line.

The most distinctive feature of this system and the one which will be of the most interest to you, no doubt, is the method involved in engaging the yarding line to the carriage and yarding the log.

Through the different ramifications of this feature one great trouble has been our inability to secure sufficient slack when and where it was needed, as, for instance, when the logs were deposited at the landing the chaser experienced difficulty many times in disengaging the chokers.

To obviate this defect, we have adopted the present method of engaging the yarding line to the carriage, which is extremely simple.

From the donkey the yarding line is passed through a bull block high in the spar tree, and is attached to a clevice at the bottom of the carriage; at the same time passing through an ordinary 12-inch yarding block which is used for raising the logs.

To the clevice or goose neck of this block is attached a ring carrying two buttlines, to each of which two chokers may be attached, making it possible to accommodate four chokers in all. To this last mentioned ring is attached the haulback.

We first sought to lift the log from the ground and lock it to the carriage, but we found such method unnecessarily cumbersome and discarded it.

We later passed the yarding line through the lower sheave of the carriage, attaching the end to the clevice at the bottom, lifting the logs by a block rendering in the bight so formed, but did not lock them to the carriage.

Both mentioned methods brought the entire strain upon the aerial line, which is a very vulnerable factor of any overhead system.

By referring to the photographs you will note that the strain of lifting the logs is equally divided between the aerial line and the spar tree. This feature has been quite thoroughly tried out and has proved quite satisfactory to date.

The logs are not suspended free in the air in the process of yarding; only one end being elevated sufficient to enable it to sheer over stumps and debris.

Wear on Line.

The wear on the yarding line is negligible except that portion which renders through the 12-inch yarding block in yarding the log. It may therefore appear that an 1⅛-inch diameter line is excessive for this purpose, but we believe it is more economical in the ultimate than the smaller one, inasmuch as it is fit for chokers following its yarding service.

The strain on the haulback is, however, greater than in ordinary service, due to the necessity for deflecting the yarding line and block at right angles with the aerial line in picking up logs.

Our records show a yarding line in this service with a credit of 9,000,000 feet and still retaining 50 percent of its life when discarded for chokers. The haulback is not used for the purpose of snubbing the logs, and is handled in the same manner as any ground yarding operation.

Adaptable to Any Kind of Ground.

We have employed this system on steep side hills, yarding logs both up and down, over hog backs and through gulches, and in most cases the force of gravity operates as a brake to such an extent as to automatically control the log. In extremely precipitous country, however, more or less trouble is experienced with logs running out of the chokers.

Two Aerial Lines Used.

Two aerial lines and extra bull blocks are employed which greatly facilitate changing from one tail tree to another. The time involved in these changes averages about three hours.

Loading.

The loading of logs in connection with this, as well as all other aerial systems, seems to be the weakest link in the chain. Seldom a day passes when there are not more logs yarded than can be loaded, by a considerable percentage. The loading crew, always hard pressed in the past, has today its cup of sorrow brim full, pressed down and heaped again. It is manifestly wise, therefore, to remove every impediment possible in order to facilitate the operation of this most important department. Accordingly, we construct what is known as the jump-up landing, use a gin pose, and crotch line, three very important factors in an expeditious loading operation. Where the crotch line is employed the loading block must of necessity hang directly above the center of the car, and therefore satisfactory results can not be obtained when the block is suspended from a guy line.

To compel the loading crew to select their logs from beneath the aerial line necessitates their working at a great disadvantage and a consequent loss.

A third man in the crew is quite desirable. Logs from the first two or three roads on both sides of the landing may be deposited on the landing, parallel to the car, by the aerial line, but as each succeeding road forms a greater angle with the track this is impossible and the logs accumulate in a huge pile, resembling jack straws, beneath the aerial line.

Three Engines Used.

We therefore at such times bring into play a third donkey for the purpose of swinging these logs into line on the landing.

In the abstract this would indicate a prodigal employment of machines, but the results in our case have justified such outlay. The third donkey involves the employment of only two additional men, an engineer and fireman, as the chaser attending this engine supplants the third loader. When we first employed this method our landing facilities were very deficient, causing endless delay to the loaders, and by using the third donkey we increased our daily out-

W. F. IZETT, OF OAK HARBOR, WASH.;
Who Spoke on "New Era" Cableway.

put from 9 to 14 cars per day, with an outlay of only $6.50 additional.

In our particular case we have spare engines and prefer to use one of these rather than invest in a specially designed machine, but by far the more desirable arrangement would be a 3-drum engine.

The Scale.

I might continue indefinitely to dilate on this subject at the hazard of boring you, but after all the proof of the system is the scale, provided, of course, conditions such as topography, size and quality of timber attending each operation are considered. You will no doubt be interested in the results as revealed by our scale book. To quote figures at random would mean little to you by way of demonstrating the efficiency of the system I describe, because you can not see the ground or know general conditions under which the logs were yarded. Therefore I shall select the month of August, just passed, mentioning the results obtained, with the explanation that I consider them about average:

		Per day
Number days worked.....	26	
Number of logs yarded.....	3720	143
Total scale.....	1499250	57660′
Average per log.....	403	
Number of cars loaded.....	298	11⅛
Average per car.....	5030′	

Ground slightly broken, but on the average good.

For the first six months of 1913, during which we logged almost entirely by this method, our average scale per man exclusive of railroad men and cooks was 1,517 feet.

Speed of Yarding Line.

As before stated, we employ a 11x13 donkey with a gear ratio of thirteen to one for yarding the logs, which, needless to say, is slow and exceedingly heavy. Inasmuch as the power requirements are really negligible it is obvious that this item may well be sacrificed for speed, and therefore we believe far better results would be obtained by employing, say, a 10x11 donkey geared in the neighborhood of six and one-half to one. This would double the speed.

Not Adaptable to Large Timber.

In conclusion I will say that while we were handling logs scaling as high as 5,000 feet in the early stages of our experiments we have not, with out present device, yarded over 3,600 feet at one time, and I do not believe the success of aerial methods in handling large timber is remarkable up to the present time, but I am so entirely optimistic as to the future that I contemplate with confidence its adaptability, through the compelling force of necessity, to any and all conditions.

Following Mr. Vinnedge's address the secretary read a number of letters and telegrams of regret from numerous loggers who were unable to attend. Among them were Peter Lund, Crows Nest Pass, B. C.; R. H. Burnside, Raymond, Wash.; C. W. Millett, Libby, Mont.; S. L. Boyd, Henderson, Mont. Following this the Chair announced a recess of 10 minutes.

W. F. Izett, of Oak Harbor, Wash., told briefly of the "New Era" cableway, which he said consisted of a cable of sufficient strength to carry any probable load suspended on properly constructed hangers. The cable can be of any make or construction that will do the work. The hanger, he said, is one of the most important, if not the chief problem. With the ordinary hanger, he pointed out that a heavy load will cause an abrupt deflection or crimp in the cable as the trolley comes in contact with the hanger, so much as to make it impossible to get a heavily loaded trolley over it. He told of having overcome this difficulty with the "New Era" cableway as follows:

With the ordinary hanger a heavy load will cause an abrupt deflection or crimp in the cable as the trolley comes in contact with the hanger as much so as to make it impossible to get a heavily loaded trolley over it. To overcome this difficulty I connect with the hanger proper, by means of a simple steel link, what amounts to a piece of steel rail, 2 or more feet long, on each side of the hanger. This is clamped to the cable. When any size of load comes near a hanger instead of a crimp in the cable this clamp settles with the load at the end away from the hanger, giving a rigid or stiff approach. Actual use has demonstrated that with this device any conceivable log load can be gotten past the hanger without difficulty. (Only use equipment strong enough for the heaviest load required.)

To save the strength of the wire for carrying loads I conceived the idea of holding deflection in the standing line between the hangers. As any wire-rope man will tell you, a cable should have enough slack to allow a certain degree of deflection to be practically serviceable. So my deflection holder or tiedown device obviates not only the need of putting extreme tension on the line when it is set up but gives the line at least 50 percent greater carrying capacity and doubtless will more than double the life of the line.

This is practically the appearance of a New Era set-up. I am not a draftsman but this will indicate my idea of the use of a deflection holder. By this means deflection helps instead of hinders. I might have indicated an extreme contour, as the rough places are the ones in which the New Era will show to best advantage. The placing of hangers and deflection holders must be governed by the contour of the country over which the set-up is made.

On ordinary ground about ten to fifteen hangers to the mile would be required. But if wide gulches are to be crossed the length of the spans would be increased accordingly, and fewer hangers needed.

Can Be Set Up Anywhere.

Except where very heavy loads are to be carried it will not be found necessary to use the deflection holder at every span. It will of course be more easily set up in a fairly straight line, but by placing the hangers closed, and using guy lines, curves can be readily made. In fact, it can be set up anywhere the materials can be conveyed on to the ground.

On ordinary ground it can be set up and put in operation while a right of way is being swamped for a skid road, to say nothing of the time required for putting in a railroad. And when the work on that set-up is finished, the whole thing can be removed to another place and nothing wasted in the way of grades, etc.

The trolley the plan of which I have drafted has greater length of frame that the ones used in any tests and also wheels 14 inches in diameter, instead of 10 inches as on the old ones. Will also use manganese steel wheels; as this kind of work is much more durable and also of greater toughness.

The hangers, clamps and trolley frames are of the best cast-steel and shaped to get the most benefit from the metal used. Another important item is simplicity of construction, a hammer, monkeywrench and plyers being all the tools required, with little need of them.

For Use in Yarding.

For yarding a special block is suspended from the carrying bar of the trolley and the main and the haulback (or trip) lines run through it like through any corner block; but a latch prevents the load dropping to the ground when coming to the landing. The donkey can be run much faster than on groundwork, one thousand feet a minute for the haulback and about half that speed for the main being a fair rate for the trolley. For roading a trolley should be used at each end of the load, thus permitting it to run freely and smoothly and also just as rapidly as need be.

Common logging donkeys can be used for this work, but specially constructed machines with much less weight but greatly increased speed will ultimately result as this and other cable systems come into general use, as will surely happen when operators realize the many advantages over the ground drag.

The cost of construction of the New Era is not great when it is considered that the trolley wheels are the only part to wear out. But I have a desire to develop it into a system that will be of benefit to the men who do the work of getting out the logs, my great desire being to bring about a "new era" in camp life where my system is used. The only way to perpetuate such a work will be to work it on a royalty basis.

Time will be required to work out this part of the system. But it has always seemed to me that conditions about the woods might be made to work for the elevation of the men, rather than for their degradation as is too often the case.

Committee Appointments.

The following committees were announced by Mr. Donovan:

Resolutions—W. W. Peed, Eureka, Cal., chairman; James O'Hearne, Mt. Vernon, Wash.; H. W. Sessoms, Arlington, Wash.; W. E. Wells, Somers, Mont.; J. P. Van Orsdel, Portland.

Memorial resolutions—John R. Toole, Missoula, Mont., chairman; E. S. Grammer, Seattle; T. J. Humbird, Sandpoint, Idaho.

Auditing and finance—J. S. O'Gormon, Portland, chairman; George W. Johnson, Seattle; T. J. Humbird, Sandpoint, Idaho; T. Jerome, Seattle, and George Weisel, Missoula, Mont.

Nominations—J. D. Young, Portland, chairman; E. G. English, Mt. Vernon, Wash.; John O'Brien, Vancouver, B. C.; E. Elfendahl, Lamoine, Cal.; H. J. Spalding, Spokane.

Place of next meeting—E. J. Palmer, Chemainus, B. C., chairman; E. G. English, Mt. Vernon, Wash.; A. W. Laird, Potlatch, Idaho; W. E. Wells, Somers, Mont.; A. H. Powers, Marshfield, Ore., and A. J. Morley, Aberdeen, Wash.

The congress was in receipt of a wire from John McDougall, Fernie Lumber Company, Fernie, B. C., regretting his inability to be present. In his absence his paper, the next on the program, was read by George Weisel, Missoula, Mont.

The aerial skidder, a product of the Washington Iron Works, of Seattle, was explained by Mr. MacDougall, whose company operates one in its logging work. He said there are minor matters which might be improved but was of the opinion that this machine, owing to the comparatively small amount of rigging in connection with it and consequent minimum delay with which it can be moved around, is the most

suitable machine for the class of timber in the rough mountainous country in which his company is operating. His description of the skidder follows:

It is a four-drum machine, one drum containing 3,000 feet of one-inch cable, being the main line, one drum containing 3,000 feet of three-quarter inch cable, being the haul-in line, and one drum containing 6,000 feet of five-eight-inch cable, being the haul-back line. The other dram is intended for loading the logs on to the cars. We have not used it for this purpose but have used and found it very handy for skidding the trees on to the rollways to be cut into log lengths.

Locating the Machine.

The machine is set up at the landing, the main line being run out and made fast to a suitable tall tree. In the event of the main line sagging after being stretched so as to come too close to the ground, or striking the ground on account of the uneven nature of the country, one or more gin poles are put up and the main line is held up from the ground by one of the "C" hangers, the open side carriage being specially constructed so as to allow the bottom part of the "C" hanger to pass through it.

We have found that we can cut a swath 150 feet wide or 75 feet on each side of the main line and handle it expeditiously. But our operation being side hill work we have not considered it advisable to try to go farther away from the main line than that distance. We have operated advantageously, practically speaking, with the whole length of the main line; that is, 3,000 feet.

The slack pulling arrangement is simple and effective, consisting of about 30 feet of light chain hanging to the bull hook on the end of the haul-in line. The hook tenders carry a short length of chain, about three feet, with a swamp hook on one end and a chain hook on the other end. This is made fast to a suitable stump, handy to the main line, and as the carriage comes back from the landing the chain hanging from the bull hook is caught and made fast to the short chain, the carriage being allowed to go on into the woods until the necessary amount of slack has been secured.

We have found it most advantageous to fall the trees so that they will lie as nearly as possible at right angles to and with the top towards the main line. The carriage is then held stationary until the trees are up to the main line and clear of all obstructions.

The timber which we are handling with the machine runs about ten logs to the thousand and five logs to the tree. We pull in one or two trees according to conditions, at a time, the trees being cut into log lengths at the landing.

The minimum 10-hour day's work for the machine is 30,000 feet with a crew of 18 to 20 men, according to conditions, at a maximum cost of $2 a thousand feet, on an average skidding distance of 2,000 feet. This includes all working expenses from the felling of the trees to the decking or loading of the logs at the landing.

We are not operating at all this season and have therefore not really given the machine a thorough try out. It 's new to ourselves as well as the men, but we are satisfied from careful observations made that with a crew of good live men we can put in from 35,000 to 40,000 feet easily and thus cut the cost considerably.

In conclusion Mr. MacDougall said the country in which his company operated is too steep for horse logging to be practical so he was unable to make any actual comparison between the two methods. The average cost of logging with horses was found to be about $5 a thousand feet at the landing and he declared he was so well satisfied that for the country in which he was operating the aerial system is the best method that the company intends to put in more of these machines and do away with horse logging entirely, if possible. One other important advantage of the system, he said, is that one can be operated almost as cheaply in six feet of snow as on bare ground.

At 12:15 the congress adjourned for lunch, which was served in logging camp style on long tables arranged on the grounds of the park, and the attendants were in this way held for the afternoon session. During the lunch hour many of the loggers were entertained by the chute the chutes, the "Slide Kelly Slide" and other attractions of the park. Just before the afternoon session was called to order the large group of loggers present were photographed.

THURSDAY AFTERNOON SESSION.

The afternoon session convened after the loggers had been "fed and mugged." First of all the loggers were given a splendid musical treat arranged by H. M. Strathern, the Scotch bard. The music was furnished by Mrs. Charles Freeze and Miss J. D. Allen, accompanied by Mrs. E. Langley, all of Spokane.

Mr. Donovan announced that the ladies would return the next day at noon, and he expected a much larger attendance as a result. He, however, requested that Mr. Strathern allow the ladies to sing at least one Irish song as a part of the second day's program.

James O'Hearne, of Mt. Vernon, Wash., was then introduced and delivered the most important address of the afternoon.

He outlined his plan of how logging engineering should be taught. The course he advanced would be nearly if not quite self-supporting, not merely because of the fact that the student may not have a thousand a year to spend on his education but because it is practical. The universities, the speaker said, have all the courses the logging engineer needs except practical logging and in application of the others to the needs of the logger. Even with the adoption of a new course of study the speaker pointed out that the established courses, such as mechanical, mining, civil and electrical engineering, would be left to be drawn upon. From the liberal arts course he said the student would want English, composition and one foreign language. He recommended Spanish, as many of the undeveloped resources of the western continent are situated in the Latin-American countries. From mechanical engineering the student would want sufficient drafting to enable him to make intelligent drawings of any piece of machinery; enough machine practice to get the use and care of lathes, drills and other tools; a knowledge of foundry work, and a study of the various kinds of internal-combustion engines. From mining engineering he would need geology, tool sharpening and tempering and first aid to the injured. From civil engineering he would need mathematics, surveying and mapping; railroad work, including the different steps of preliminary and location work; construction, railroad structures, maintenance and operation, and safety appliances. From electrical engineering he would need the general principles of applied electricity.

After having borrowed so much from the other courses the speaker said he would get from the course outlined: forestry, engineering, logging, sanitation, efficiency and general repairs. Mr. O'Hearne elaborated on the various branches to be taken up in the course of study outlined and declared he would like to see the actual work plan tried out. With reference to this he said:

To get the education as outlined, I would like to see an actual working plan tried out. Let the teacher and his students spend six months of each year in the camps, say from April to September, inclusive; this will give them the benefit of the best weather for their woods work, the remainder of the year to be spent in the university. Give them no holiday except that the logger has, one week at Christmas and one week at Fourth of July. Let them take a contract from some camp in operation to deliver the logs on cars at so much a thousand for the time specified. If the camp is a large one, they could contract but one side. A large camp for them to work in would be preferable, for, while they would be using one method, they would probably be able to see others in operation. It may be hard to find a logger who would take the chance of contracting a side to a bunch of schoolboys, but trust, after the first experiment, he would not hesitate again.

The chief men in the crew must be experienced loggers; the students, for the first year, filling in only subordinate places. They can fire donkeys, give signals, cut wood, help around the rigging, swamp, and take a hand at bucking and second falling as the opportunity arises. It will be necessary to change them off from one thing to another as time goes on so that each will get the benefit of the work. Again one may be moved from his side occasionally to help the blacksmith or do some other work that would not naturally come under the workings of one side. If the boys are what they should be, there will be no difficulty in getting these chances as there are always times in camp when an extra man is needed, and when the foreman finds he has an intelligent and willing bunch to pick from he will not be slow in utilizing the opportunity. This is all we could hope to do the first year. We could not get above the minor positions but by changing the men around they would become fairly familiar with repairs made to the donkey and other machinery, spliced line, the significance of block, block and a half, and other means of increasing power or changing direction of lead; and should have a fine healthy body and a clear head to begin the winter's work inside.

Should Work at Common Labor Wage.

The pay for the work should be at the rate for common labor and should be the same for all students, so there would be no friction when changes from one kind of work to another were made by the instructor. Profits on the contract should be divided equally among the crew. Students should eat at the regular mess house and with the crew, but separate sleeping quarters should be established, as the work of the day will have to be talked over and notes kept. The study of forestry and practical mechanics should be going on, as those are things that can be observed daily. During break downs, if waiting for material, trips can be taken to other parts of the work or into the forest. Rainy days can be spent to good advantage in the shop.

The second and third years will see the student taking higher positions and filling them more creditably. The third year camp accounting should be taken up with the other work, logs scaled, and cost statements made up. The cost statements should be made up from the actual costs in the camp if there is no objection from the management, and there probably will not be. In fact, most of the loggers like to have their cost statements examined. Outside work for the second and third years must be varied and it may be advisable to work different years in different camps in order to get all kinds of work. Some time in the course it should be arranged to help build a camp; this should not be hard to do when camps are moved and new ones built so regularly. During these three years, by careful watching, he will have had an opportunity to work at or around every kind of work in the camp, will have helped repair engines, build camps, fight fire, and in short, become familiar with all camp work.

The fourth year he should begin to run the compass, cruise and run levels. It is going to be harder to keep up his earning capacity this year, but from the reputation he has established in his former years' work, he will probably be able to follow the work he needs, at least a part of the time, and draw pay for it.

The fifth year will see him laying out and grading logging spurs. If possible, a contract will be taken to lay out and grade so much road, and if no contract can be secured work in the crew should not be hard to get, especially at this season of the year when all camps are short on this kind of help. He will sharpen and temper picks, mattocks, and drills, get the use of powder, and help build bridges and trestles. He will get actual figures on cost of earthwork, rock work, and trestles. Will study the different kinds of trestles used in camps; namely, crib, bent, and pile, and financial or other reasons for the selection of kind used.

The sixth and last year, a fair-sized tract of country should be taken and all the engineering work done necessary to open it up for logging. Cruise, make topographical map, lay out all main lines, sidings, and spurs, and mark the best places for rollways. This may have to be dead work so far as finances are concerned, but it may be that some firm would want just that class of work done and would be willing to pay the class just what it would cost it to have it done otherwise. This would help the class some, not a great deal financially but a great deal morally: it makes the work so much more interesting to know that it is going to be used. One of the most serious causes of indifference in much of the manual training work and field work done by schools is the fact that the products of the work are not used.

Our engineer should now be able to start in as a very efficient assistant to the superintendent of a large concern, or be able to handle the engineering problems of a smaller one. His future now rests with himself, but if he has undergone all this course has outlined for him, the future should cause him no terror. Six years seems to be a long time to put in on a course, but, consider that the student is probably 17 or 18 years of age when he started and has spent six months out of each year earning, and you will find the time is reasonable. He will graduate at 23 or 24 and that is about as young as one could well be and bear the responsibilities for which he has fitted himself.

Little time seems to have been left him for athletic work, but the live student will find time for that. He will organize baseball teams and other sports in the camps when he is working, and should come back to school in the fall fit to take his place in any line of athletics he leans to. The wise student will become as proficient in this line as his abilities and time will permit him.

It probably seems a waste of time to the student to give signals, fire donkeys, or sling rigging; but if Mrs. Andrews, the widow who owns and manages one of the most successful vise and anvil factories in the country, and who can boast that on her anvils were sharpened the tools that dug the Panama Canal, could find the time to learn to do each and every job about the plant, from the melting of the iron to the finishing of the anvil, and not only that but will ask no man in the plant to do more at his task than she can do in the same time, could take the time to learn this, the young man who expects to make logging his life profession can take time to learn something of the work he intends to follow.

Some provision should be made for the young man who has not had the advantage of a high school education but has a common school education, and who is intelligent and worthy. The entrance of such should be left a great deal to the discretion of the instructor and some provision made, by preparatory school or otherwise, for him to join the class.

This address was scheduled for considerable discussion and in addition to the names given on the program Dr. C. A. Schenck, of the Biltmore Forest School, and Professor Clothier, of Pullman, Wash., were asked to discuss this paper.

Mr. Donovan himself was on the program for discussion of this paper. He highly commended the thoughts expressed by Mr. O'Hearne, and said that in criticising the ideas it seemed to him that if anything was wrong with these plans it was that they demanded too much of the young man. He asked: "Are you simply trying to make a good all-around-logger of the boy or would you rather have a highly trained mind to develop a manager and a high class engineer?" It seemed to him that it would be on a broader, higher and more beneficial plane if it skipped some of the hard details of the work.

After offering this short criticism, Mr. Donovan called on Dr. Schenck.

Dr. Schenck mounted the platform, suitcase in hand, and remarked that he had come to stay and that like a good logger he had brought his bedding with him. Mr. Schenck said in part:

I think the best way to teach any fellow logging engineering would be to bring him as often as possible to the Pacific Logging Congress. The greatest advantage in this to the youngsters would be the opportunity of meeting the biggest

MEMBERS, GUESTS AND THEIR LADIES WHO ATTENDED THE FOUR DAYS' SESSION OF THE FIFTH PACIFIC LOGGING CONGRESS HELD AT SPOKANE.

and best men in the business. Ninety percent of success lies in the knowledge of men.

Unfortunately the logging congress did not exist when I discovered America eighteen and a half years ago. I came over here from Germany with no money, but a large amount of forestry knowledge. George Vanderbilt wanted a foreign forester so he brought me over and put me on 125,000 acres of so-called timberland, but there was no stumpage on it at least there wasn't three thousand feet to the acre. The worst of it was I didn't have any knowledge of logging or lumbering. They made me president of the Biltmore Lumber Company, with a band mill to operate and I had never seen a band mill. The question was how should I get the knowledge. I started out by writing a book on logging engineering. Where is Mr. O'Hearne who said there is no text book on logging engineering? I dedicate this book to him. (Here Mr. Schenck produced one of his books from his suit case and tossed it to Mr. O'Hearne and also one to George Weisel.) I got the AMERICAN LUMBERMAN and other periodicals and read them all and I went around to see how the other fellows were logging. I couldn't learn from the moonshiners up there in the hills of North Carolina. Finally I started to log and I built a splash dam. It wasn't very successful. I estimated that it would cost $1,000 but it cost $9,000. I had to wait nine months for a freshet, but I finally got down about three million feet of logs. Later I found that in such scattering timber it was much more economical to use portable mills and transport the mills to the timber instead of the timber to the mills. I managed to make this system pay.

To get back to the subject—how to teach logging engineering—I have tried to do just that for fifteen years. Biltmore is the smallest forestry school in the country and it has no endowment, but it has something more important —the support of lumbermen. I am known in the East, but not very well known in the West. I am sorry that Columbus and I did not discover America on the west side. Logging engineering is only a part of all forestry work. German foresters are not what you think—all tree planters—but are mostly loggers and lumbermen. I invite everyone of you that has $350 to go back with me to Germany in January and February and see what German foresters are doing. Their methods are all right for them but would be folly in the western part of this country today. They would not pay at all. Now I want to define forestry for you.

Forestry is anything that has to do with goods. It is mainly logging and lumbering. In the United States forestry is divided and subdivided. Public forestry is only about 4 percent of the whole. Of private forestry, probably financing is about 10 percent, fire protection about 1 percent, etc., but logging and lumbering are about 84 percent. Now if logging and lumbering are about 84 percent of forestry, why don't our forestry schools teach logging and lumbering? One reason is there are no teachers—question how will we teach logging engineering teachers? Where shall we teach logging engineering? The answer is —Where we meet the hardest problems. The best teacher is he who does things in the woods and shows how it is done. What shall we teach? I do not believe in foreign languages—except German. I believe in teaching them the practical things about logging. I do not believe in teaching them physics. I passed with highest honors in physics under a famous professor, but what I know about physics would not fill a book.

I believe that the six-year course as proposed is too long for the good red blooded boy to wait. He wants to get to work sooner and the prospect of going to school for six years is discouraging. Neither do I believe in teaching these boys all of the little details of hard work about a logging camp. You can not make them blacksmiths and everything else. The brain is limited to a space about 5 by 5 by 5 inches—and some have less. The right boys can get a sufficient course in less than six years. Now we want to get the right material to work on. How will we manage that? By eliminating the weaklings from the course. This is done by giving them a lot of hard work to do. I recently left my boys at Marshfield with Al Powers and told them to make good. Some of them have been eliminated. I started my boys out last spring in the Adirondacks and took them to the southern pineries, then up to Michigan. Now they are out in Oregon. Later they will go to California, Washington and British Columbia.

Dr. Schenck's address made a big hit and as Mr. Donovan said was a treat for everyone present, and he took occasion to thank Dr. Schenck.

The other speakers who were to discuss this subject were asked to limit their remarks to five minutes each.

Professor Clothier, of Pullman College, Washington, came to the defense of Mr. O'Hearne's paper and differed somewhat from Dr. Schenck. He said:

Both have about the same idea, but express it much different. O'Hearne would divide the time between the college and the woods, but Dr. Schenck, being a whole college in himself, can take the college to the woods with him.

Professor Clothier was in favor of the six-year term for logging engineers. He believed that the six-year term was not too long, especially with half of the time divided between the class and the field. He said the equipment of a good engineering college is necessary to make a good logging engineer.

J. P. VanOrsdel, logging superintendent of the Portland Lumber Company, Portland, Ore., who has given the subject much thought, said that he thought six years too long to expect a young man who wants to get into the game to wait. He said the real logger will go into it for the love of it, and the way to pick the material is to start the boy out some spring to get a job in the woods on his own hook. After he has tried it he will probably go in for literature, but if he still wants to go in for it he will make good material for a logging engineer.

Mr. Donovan then called on the "Hon. Mr. Young, commonly known as Jim." He is logging superintendent of the Inman-Poulson Lumber Company.

Mr. Young said that he tackled the subject with reluctance. He knew something about logging but not anything about teaching logging engineering. His advice was not to educate them so much they will be unable to make a living. He said he had had forestry school graduates that could not lay out a cow path. Mr. Young's idea was that they should be especially taught the more practical things.

The Chair said: "I will now call one of the college men to the bat and let them have an inning." He then introduced Prof. J. E. Kirkwood, Missoula, Mont.

Professor Kirkwood read an address, which showed he had given the matter much thought and outlined a six-year course for logging.

The speaker said that from the background of his boyhood years in the forests of western Oregon, from experience as a young man in the logging camps on the Columbia River, and later as a student and teacher of forestry, he had long been convinced that the whole scope of logging should, and soon will occupy, a high place in engineering science. The whole purpose of the training of a logging engineer, he said, may be summed up as an aim that the largest possible returns may be realized upon an investment in timber or timberlands from the standpoint of the operating lumberman.

The first requirement—that of accurate estimates—involves an extensive knowledge and training in the numerous operations, the cause of which must be determined in any logging job. To reduce the cost in logging, as in any other business, is a problem involving the principles of organization and efficiency. To meet the silvicultural requirements of the stand is, in his opinion, essential from the standpoint of a permanent investment. He pointed out that one has only to glance at the program of the present meeting in order to gain some idea of the scope of subjects which the education of the logging engineer should embrace. Continuing, he said:

In my opinion the course of study might be outlined briefly as follows, and falls naturally into three groups:

1. The cultural and foundation subjects coming principally in the high school, viz., English and modern language, American history, economics, physics, chemistry, geology and biology, mathematics, business methods, etc. These subjects as a foundation for the later studies, and as part of the life equipment of every man, enhancing the dignity of his calling and increasing his influence in the community.

2. Engineering subjects: Civil engineering—Areas, topography, roads, construction, etc. Mechanical engineering—Machinery and devices, power, fuels, etc. Electrical engineering—Generators, motors, wiring, telephones, lights, etc. Descriptive lumbering. Shop work and drafting.

3. Silvical subjects: Identification of trees. Local distribution, growth, and reproduction as related to soil, moisture, climate, etc. Methods of reproducing a stand. Recognition of fungi and other deteriorating agencies. Determination of the rotation period, etc.

Outline of College Course in Logging Engineering.

FIRST YEAR.

Field—Common Labor About Camps.

First Term.		Second Term.	
Math. (algebra and trig.)	5	Math., anal., geom. and calc.)	5
Physics	5	Physics	5
Elementary botany	3	Elementary botany	3
Drafting	2	Drafting	2

SECOND YEAR.

Field—Swamping, Barking, Bucking, Etc.

Mensuration	3	Mensuration	3
Surveying (compass and chain)	2	Surveying (transit and level)	2
Mechanics	5	Applied mechanics	5
Chemistry	3	Chemistry	3
Shop (wood work)	2	Shop (forge and foundry)	2

THIRD YEAR.

Field—Felling, Scaling, Accounting, Etc.

Surveying (topography)	2	Surveying (railroads)	2
Forest botany (classific)	5	Forest Botany (ecology)	5
Descriptive lumbering	3	Descriptive lumbering	3
Fire protection	2	Construction dams, booms, rafts, etc.	2
Geology	3	Mineralogy	3

FOURTH YEAR.

Field—Compass, Levels, Etc.

Silviculture	5	Silviculture	5
Road survey and location	3	Railroad survey and location	3
Road construction problems.	2	Railroad construction problems	2
Materials of construction	3	Materials of construction	3
Design of flumes and chutes.	2	Construction of flumes and chutes	2

FIFTH YEAR.

Field—Road, Location, Etc.

Bridge design	5	Bridge construction	5
Steam engines	4	Logging engines	4
Electricity	4	Electricity	4
Camp construct. and org	3	Forest propogation	2
Forest Entomology	2	Forest pathology (fungi)	3

SIXTH YEAR.

Field—Estimates on Certain Tract, Full Working Plans.

Forest management and finance	2	Forest management and finance	2
Yarding	5	Transportation	5
Electrical machinery	3	Electrical machinery	3
Thesis	8	Thesis	8

Following Professor Kirkwood, Dr. C. H. Shattuck, of the University of Idaho, Moscow, Idaho, gave his views on this the subject generally conceded to be the most important coming before the congress. Professor Shattuck paid his compliments to Dr. Schenck and said that his ideas were the outgrowth of those imparted to him by that worthy teacher of forestry.

Prof. Shattuck suggested that text books be employed freely and that a very carefully prepared course of collateral reading be assigned in the teaching of logging engineering. As to what the logging engineer should be taught Prof. Shattuck said:

Here, of course, the "doctors disagree." We have many colleges and universities where various kinds of engineers are prepared, and we instinctively turn to the curricula of these institution to see what they are prescribing for engineering students. We are at once impressed with the similarity of subjects taught in all the better-grade institutions granting engineering degrees.

[Here outline courses in engineering were introduced in the form of charts.]

If all our colleges and universities, many of which have been turning out high-grade and thoroughly-trained engineers for many years, consider these subjects fundamental and have employed them in the training of engineers of all kinds, should we not consider them also in preparing a logging engineer?

The logging engineer is no less an engineer than the mechanical, electrical or civil engineer. In fact, he must be just as thoroughly grounded in the fundamental principles of engineering as any of these. He must receive therefore the same training in those subjects, which it must be admitted are essential in laying the foundation for a course in any line of engineering that other engineers receive.

In addition to these he must receive such a training in forestry subjects and ways of the woods as is necessary to give him the forester's viewpoint in planning all his engineering operations. It may be difficult to make this point clear, yet the fact remains that engineers of ability but not having this viewpoint have been tried as logging engineers repeatedly with indifferent success. A knowledge of the industry is very essential to any man planning larger operations in that industry, and he who ventures so to plan without this knowledge is sure to make many and grave mistakes. The logging engineer should know timber and lumbering and the ways of the woods, in life, death, and destruction and regeneration; he must know species, and stands with their yields, and have a good knowledge of forest utilization and management; above all he must know men and especially men of the woods, for they are a tribe unto themselves. In other words, he must have a practical knowledge of forestry as well as engineering before he can be a good all-round logging engineer.

In solving the problem of where the logging engineer should be trained, Prof. Shattuck said it is well to observe the methods used in other engineering courses where it has been found necessary to shift the student to the proper environment from time to time as the occasion requires. Practice and demonstration in the laboratory and field, he said, are indispensable if the student would acquire skill and judgment in his line, as well as be able to assimilate the condensed information contained in the text books and lectures.

As to the length of the prescribed course, he said:

This question is a very important one. It must be considered from several angles. The tendency on the part of lumbermen generally seems to be to make this a long course; their aim is to acquire thoroughness, and nothing better can be desired. They are entirely in the right in desiring that the men remain in school until they are as completely equipped as possible, and no one desires to find fault with or criticise this. Yet we who would train logging engineers must look at this question from another direction as well. The great majority of engineering courses embrace but four years. This is a significant fact which the young man considering what line of engineering he will take is not apt to overlook.

WASH., SEPTEMBER 24, 25, 26 AND 27, DURING WHICH MUCH SPIRITED DISCUSSION LOOKING TOWARD THE ADVANCEMENT OF LOGGING TOOK PLACE.

We must show him in no uncertain way that there are pecuniary advantages in taking a longer engineering course, or he simply will not do it. This is especially true in the Northwest, where the demand for trained men is large and the supply limited. These men will not elect logging engineering simply for the love of the work. I have found very few missionaries among engineers. They generally, like most of the rest of us, are on the lookout for the best paying job they can find and generally want to get into it just as soon as possible. Now, if we ask them to take a five- or six-year course to qualify as logging engineers the salary must be such as to justify them in making the sacrifice in time and money which the longer course requires. Can we satisfy them that such will be the case? If we can not most of them will elect some other branch of engineering and few, if any, will register for the course in logging engineering if it is longer than four years.

At the present ime we are not able to say what the salary of our logging engineer will be, or how he will rank in this respect with other engineers, but we have a right to assume that the salary will not be very high to start with. Are we justified in assuring the young man that there will be enough difference between his salary and that of other engineers to compensate him for the extra two years spent in preparation? This is a serious question for those of us who teach, and likewise one of intense interest to those who would become logging engineers. Yet, since no logging engineers have gone out from the schools, we can not answer the question. Can the employer do so? If he can tell us what a reasonably good logging engineer is likely to receive it will help us who teach to shape our courses properly and will also enable us to induce students to enroll in these courses. At the present time, as Mr. O'Hearn has well said, the pecuniary advantages held out seem to be insufficient to justify students in expending the time and money and, as one aptly put it, taking the punishment which a five- or six-year course involves.

I am inclined to favor a four-year undergraduate course in logging engineering as in other engineering courses, adding as the vocation seems in the future to justify one or more years of post-graduate work which the four-year graduate could come back and take after having had a few years' actual practice in the field.

Such a course, while it may not contain all that might be studied to advantage, contains the fundamentals found in all engineering courses and therefore necessary in training all engineers, and like other engineering courses contains the essentials peculiar to that particular line of engineering, which in this case would be made up largely of forestry subjects.

Chairman Donovan in introducing Prof. George W. Peavy, of the Oregon Agricultural College, who has charge of the forestry department at the college, said: "No better use of a million dollars could have been made by Oregon than to invest it in teaching logging engineering. It has far more timber than any other State in the Union, but does not cut nearly as much as Washington. It has the greatest future in lumbering before it and should wake up to its need for operators."

Professor Peavy said of teaching logging engineering:

It is a local proposition. The boy who starts in to take a course in logging engineering surely has an idea whether he is going to operate on the Pacific coast or not. We could not afford to take him all over the United States and take up each particular problem. There are other things you want your sons to know if they are the ones who are going to take this course besides details of logging. Your sons should have just as broad an education as other boys and I think the course should be at least five years in length. The first two years, nine months should be spent in college and three in the woods and the next three years the time could be equally divided between the woods and the class rooms. During this time while working in the woods the boy could be earning a salary, which in many cases is necessary to help him defray the expenses of his course. The timber owners of the State pay at least half of the taxes. Now while they are contributing half of the maintainance of the colleges they get nothing in the way of training logging engineers. They must have the sinews of war in this instance and they must go to the legislature to get it.

Prof. Hugo Winkenwerder, of the University of Washington, Seattle, told of the work of the University of Washington Forestry School and his ideas of establishing a chair of logging engineering on a larger scale. He said the University of Washington has been wrestling with the idea of giving such a course, and he finds that everyone has a different idea. He said a course of logging engineering can come only as a development. The University of Washington has changed its course every year since it started. Some of its men who have gone out are making good and this gives encouragement and makes it feel it is on the right track. He said there ought to be a good deal of field work, but that it would be well to dispense with much of the primary field work. A man does not have to know all about firing a donkey engine to be able to tell when he has a good fireman. He objected to six months a year field work, thinking it too much, and suggested three and a half months during the summer and one day a week during school work.

Mr. Donovan paid a high tribute to the work of the university men and then asked Mr. O'Hearne to close the discussion of his own paper, thus giving him an opportunity to defend it against any criticisms.

Mr. O'Hearne sidestepped the issue but told the congress what a logging engineer is in the following laugh-producing lines:

Logging engineers were discovered and named by G. M. Cornwall about the year 1909 A. D. They are a semi-civilized race living on mountainous tree covered country. At one time they were considered a menace to the Government, especially of the forestry department but, as in many other instances, a closer study of their habits has brought out the fact that they are almost harmless and probably are useful to mankind. The Government is continuing its investigations and it is supposed will soon issue a pamphlet giving their full genealogical history and their economic place in civilization. At the present time the States and districts in which they are situated are taking steps towards having chairs established in the universities to prevent their extermination.

Physically they are active, healthy, and gaunt. Their lower extremities are especially well developed, supposed to be the result of climbing up and down hills and springing from windfall to windfall. They have great powers of endurance and are resourceful to a marked degree. Have been known to exist for indefinite periods on bacon, beans, flapjacks and nicotine.

Their chief pastimes—they do not seem to have any regular work—are cruising, planning for the removal of timber, and quarreling with the timber owners as to the best methods of operating camps. In cruising they estimate the amount of timber on any tract, giving the different species and the grades of each specie. This gives their guessing faculties great exercise and some of them have developed to be wonderfully good guessers. They also, by means of a few hieroglyphics, give a description of the nature of the land on which the timber is situated, showing where rocks, creeks, and slopes are and the steepness of the slopes. These charts are interesting to those who have studied their language or have an interpreter.

In planning for the removal of timber, he decides on the best of the standard types of logging, skidroad, railroad, or cableway to use; or he may decide on a combination of any two or probably the three of them. Then again it may be that a special system will have to be devised to suit some particular case. He knows the type and size of engines, both donkey and locomotive, that will handle the product most economically; knows the best place for the railroad to run—the best place for three reasons; studying the timber at the most convenient point for yarding and trading, making it easy and safe to handle the cars when loaded, and cheapness of construction—this last appeals especially to the owner. He knows enough physiology to bind up a smashed toe but not always enough to come in out of the rain; enough botany to distinguish a fir tree from fireweed; and enough geology to tell hardpan from peat.

At some time in his life he has been forced to do nearly every kind of work in the world. This was not on account of any inclination on his part to work but stern necessity commanded it and, like many of the so-called ills of life, this was of great benefit to him. He learned the use of tools and rigging, got a general idea of machinery, found what constitutes a fair day's work, and has the advantage of having the viewpoint of the workman. They are showing some signs of further development, widened by the fact that of late years he is requiring a little knowledge of gasoline and electricity.

Temperamentally, he is an optimist, never giving up because some of his plans fail. He seems to realize that there is some way out of every difficulty and is persistent enough to keep trying till he finds it.

Artistically, he is inclined towards painting, of which he sometimes becomes a past master. He has been known to paint a whole town red in one night.

Morally, like most primitive people, he has not learned the methods of deceit, and does not thrive well when subjected to the demands of higher civilization.

This address was not on the program, but it made a big hit.

At this time the Chair announced a recess of fifteen minutes, after which, H. D. Langille, president of the Tree Faller & Cutter Company, Portland, Ore., delivered a very interesting address.

That efficiency is the greatest requirement of complex, modern industrial life was the opening statement made by Mr. Langille. It is sought for by the foremost men

FRED McCURDY, OF HILLSDALE, ORE.;
Who Told of Donkey Boilers.

in every vocation; it spells the difference between success and failure; it enables one man to climb the grade, while another exhausts himself at the foot of the hill; it makes the difference between men and their accomplishments and is what most persons generally term "luck." In a narrower sense, he said, it means a minimum of expenditure with a maximum of production.

The speaker exhibited a device calculated to assist in converting trees into logs, with the saving first of the physical strength and time of men; second, of a larger part of the raw material representing the investment, and third, cheaper delivery of logs from stump to car. In describing the device Mr. Langille said:

It is not an experiment. Its practicability has been tested and proved under the most severe tests to which any reasonable men would subject it. Two tree fallers of the original design and material have been in use for several weeks in one of the camps on the lower Columbia, and even that inferior type has given complete satisfaction. The new design, of which I show the larger type, is much superior in every way. Its success and its value to those operating in large timber is assured.

Device Involves Lever Principle.

As you see, the device embodies only the simple old principles of arms working on a fulcrum and spread through the agency of a slow-moving screw operated with a hand lever. Its lifting power is enormous. I am unable to tell you how much in pounds because as yet we have not tested it scientifically with mechanical appliances, but we have tested it thoroughly in practical use. A few days ago I witnessed a test made with this faller. We selected a Douglas fir 5 feet in diameter and 260 feet in height from the ground. This tree stood on the point of a ridge and it leaned down the hill 23 feet 9 inches by actual measurement with a transit. The experienced fallers who cut it agreed that not more than three logs could have been saved had it been necessary to cut the tree in the usual way. We lifted this enormous weight against its lean and felled it in exactly the opposite direction along the crest of the ridge, saving, without a break, seven 32-foot logs, or 224 feet of merchantable length, or all there was in the tree. The top broke at 10-inch diameter. Assuming that the three butt logs could have been saved under the old method of cutting, the saving in log value from this one tree alone by the use of the jack was $45 at the present low price of logs.

At another camp a magnificent spruce containing 20,000 feet of logs was left by the loggers because had it been felled across the deep narrow gulch over which it leaned, its destruction would have been complete and there would have been nothing but additional litter on the ground. With one of these jacks the tree was lifted against its lean and laid up the hill without a break under 200 feet from the stump. These are merely examples of what has been done. The lifting power of the device is limited only by the compression strength of wood, hence anything not outside the bounds of reason can be accomplished by using two jacks in order to secure a greater compression surface.

Adapted to All Sizes of Timber.

The weight of this form, complete, is 122 pounds. The jaw opens 7 inches, hence the jack is capable of throwing trees of almost any size. This type is adapted to use in the heaviest Douglas fir, spruce and redwood forests where, by using two jacks, trees of any size may be thrown in any desired direction. We now propose to make a lighter form for general use in smaller timber. This will weigh about 80 pounds complete and possess the same strength as this form, but it will not have the same spread. Later on we may design a still lighter type for use in place of wedges in ordinary timber felling. The device is made of the best grades of steel by the drop-forge process, instead of by casting.

Increases Efficiency of Falling Crews.

It will be easily seen that not all of the value of this device lies in saving timber, although this feature alone demands its use. The efficiency of falling crews is greatly increased. Instead of spending hours in almost fruitless, exhausting effort to throw trees with wedges, the saw is kept free at all times, thereby increasing the capacity of a crew 35 percent, according to experienced fallers who have used the device. Nor is this all. Every logger who has worked in big timber knows not only the enormous loss of good values through breakage, but also of the added cost of yarding where the ground is strewn with broken logs and debris. With every tree taken out in its entirety, the work of the book tender is made easier and consequently the efficiency of the entire donkey crew is increased.

These are the prime merits possessed by this device. You will discover others if you put it into use. It is one of the greatest factors in true conservation ever added to the equipment of logging camps. It means the saving of billions of feet of timber in this western country of big trees; it means the saving of hundreds of thousands of horse power in human strength; it means easier work and therefore greater contentment among those who toil in the woods; it means greater yields of timber a day and acre and therefore greater profits to the operator; it means a "minimum of expenditure and a maximum of production"—which is efficiency. More than these can not be asked of one simple device.

Mr. Donovan jocularly asked the secretary to keep order while he delivered his address on "Modern Camp Buildings." He prefaced his address by explaining with a chart the rooms in the bunk house differing from ordinary camps.

He declared each camp and timber tract is a problem for the owner which may be solved in various ways. While it is not always clear which plan is best, he pointed out that cheap, insanitary camps may not mean eventually a low cost per thousand of timber handled. In his opinion the big, dark, crowded bunk house is out of date even for temporary camps and its place is being taken by small units, portable or on wheels, where men have more privacy, more comfort and may form more congenial groups. Loggers at most camps, he said, have little ground for complaint as to food, shelter, or pay now that the donkey, locomotives and "flying machines" have replaced the ox- and horse-teams of twenty years ago.

He told of his company's plant at Alger, in Skagit County, and said this was the result of a combination of circumstances which warranted better construction than usual. After fourteen years of operation, involving the building of seven temporary camps of various types, the company had cut all the outlying timber. Its holdings, aggregating 1,000,000,000 feet, were all within six miles and half within three miles of Alger, where the company's logging railway crosses a branch of the Great Northern Railway.

With reference to the modern bunk house constructed on this operation, Mr. Donovan said:

With a dismantled mill, old store and office as a nucleus, we built, early in 1912, a new bunk-house which accommodates 100 men, repaired and renovated quarters for 50 more, transformed the old mill into a dining-room seating 150 with suitable kitchen and store-rooms and recreation room up-stairs, built a machine shop 80 by 100 of common boards on heavy frame, oil-station, water-tank, sand-house and a number of small auxiliary buildings.

All are lighted by electricity, the bunk-house and dining-room heated by steam and supplied with hot water from the machine-shop 300 feet away, where we make all necessary repairs on our fifteen donkey engines, four locomotives and sixty cars. Our railroad yard is arranged with Y passing and spur tracks at this point so supplies may be delivered and trains made up with the minimum of labor.

We expect Alger to be our supply and repair headquarters indefinitely and for two or three logging sidings as long as we can reach the working front in the woods within 15 minutes by rail. This means approximately a 4-mile radius. After that distance is passed light, outlying camps will be used. Because of the permanence of the repair part of the camp our machine-shop was made 80 feet wide and 100 feet long, strong, simple construction with double tracks and pits in the center. One side is used entirely for the storage of wooden car-sills and repair parts and for woodworking. The other side is the machine-shop proper. An oil burning, 54-inch by 15-foot boiler furnishes light, heat and power for the shop and camp. It uses from 16 to 24 gallons of fuel an hour, depending on the work. A 7 by 12 Atlas engine drives the shafting and a General Electric 20 kilowatt dynamo.

In the shop are two forges, a No. 5 Beaudry power hammer which with one blacksmith and helper do all the work for the railroad and three sides, a 12-foot New Haven lathe, 26-inch swing, a shaper, a 26-inch Barnes drill, a Williams No. 1 pipe and bolt cutter, a 75-ton hydraulic press, power grinders and saws enable a small force to keep our equipment in repair at a minimum cost.

The dining-room and recreation-room overhead are capable of caring for 150 men. The recreation room has books, papers, card-tables, two pool-tables, a barber's chair, bath-rooms and lavatory. This is open to all, but for use of baths and pool-tables a small charge is made by our lessee. He sells soft drinks, cigars and tobacco. No gambling, nor sale of beer or liquor are permitted.

Description of Bunkhouse.

Our bunk-house has created more discussion than any other feature of the camp and is perhaps worthy of some description. It was designed to be cleanly, comfortable and sanitary. It is heated with steam, electric lighted and has hot and cold water where fourteen men may wash at one time in the lavatory at the rear where are also modern toilets draining to a septic tank 500 feet away.

There are eight rooms accommodating eight men each, two of four, and the upper floor, where there are accommodations for thirty. The eight-men rooms are 15 by 26 with a light partition crossing midway, but with 3½-foot center opening. This gives each man a corner of his own with shelf and locker.

Two large windows hung on pulleys insure ventilation. There are a small table and electric light for each four men.

Steel "Tiger" bunks 3½ by 6½ feet are provided for each man, also a plain mattress. The men still carry their blankets and having provided these quarters, each man looks after his own belongings. The company sees that every room is swept daily. The hard-finish plaster and steel bunks have reduced the danger from vermin, which often infest otherwise good sleeping-quarters, to a minimum.

Twelve by 36-foot porches in front of both first and second stories are much used by the men in good weather.

A good water supply was obtained by laying a wooden pipe line, partly 5- and partly 4-inch, up Silver Creek, one mile, at a cost of $1,500.

The bunk-house cost $5,000, the steel bunks $675, and the total cost of the camp, old buildings renovated, new ones constructed, water and electric supply, bunks and other furniture, was $15,427.05. This does not include any track work, nor the machinery at the shop.

The speaker also told of having undertaken some provision for families after having arranged for economical repairs to equipment and the decent shelter and feeding of men who live in camps. Stumps were removed and 10 acres cleared from which lots 50 by 130 feet were sold, practically at cost, to those who desired homes of their own. The company also offered acre lots uncleared, abutting on a road which passed about 1,000 feet to the east of the camp and on which was located a good school-house, on long time and easy terms. Lumber was also furnished from the mill to those desiring to build. Four modern cottages, he said, were built on large lots for rent to principal employees. He declared that no attempt had been made to boom this village and speculation was discouraged. The town has a school, church, postoffice, hotel, restaurant, two stores, daily stage, and a weekly train for freight and Mr. Donovan said that at the turkey-distribution last Christmas, forty-six heads of families showed up at the office.

In conclusion the speaker said that some have smiled at the company's expenditure as being too large for the object attained; some buildings have been plastered where boards might have served and several hundred dollars have been spent for paint and whitewash for buildings the company expects to use for many years. As an evidence of the loyalty of the employees, Mr. Donovan said, that when the I. W. W. called out men last June, seriously crippling many camps, none of the company's employees—numbering 213—quit. In his opinion the loyalty shown was due largely to the fact that the company is giving its employees proper places in which to live.

Good machinery is important in all woods' operations, he said, but even more vital is a force of sober, efficient and contented men.

Secretary Cornwall rang the bell calling time on Chairman Donovan just as he finished his paper.

B. R. Lewis, Seattle, Wash., of the Clear Lake Lumber Co., who was next on the programm, was not present at this time and his address was postponed until the following day.

Boiler Comparisons.

In a comparison of the advantages of the vertical donkey boiler over the horizontal type, Fred McCurdy, of Hillsdale, Ore., said:

I believe the locomotive type of boiler must eventually prevail in woods use, for the following reasons:

1. Submerged tubes are practicable. It would not be feasible to attempt to secure the submerged tube design in the vertical boiler, for the reason that it would necessitate the building of an extra dome or receptacle in which to carry the dry steam. This type of construction would more or less obstruct the draft and thereby defeat its purpose.

Enclosed Steam Pipes.

It is my judgment that the logging engine manufacturers in the near future will realize the advantages of locating their steam pipes inside the shell of the boiler. By making these changes in construction it will give the same results as are now obtained in locomotives by supplying dry steam to the cylinders. The cost of making this change would not be very much greater than in the present type.

In case of an accident necessitating the removing of these pipes, provision could be made in the construction of the boiler so they could be removed without involving a great deal of labor. In my judgment, however, the chances of accident occurring to the enclosed pipes would be very much less than that of the exposed pipes.

At the present time in order to overcome the vibration we have to use a universal joint which, at best, must in the very nature of its construction give more or less trouble.

I believe when you come to figure this matter out you will find that the difference in the efficiency of the dry steam delivered directly to the cylinders instead of being subjected to exposure entailing condensation—especially in cold weather—will insure a considerably higher efficiency than is now possible with the present system of installation. Reduction in fuel costs and labor would at once become apparent, as the steam would be able to render its maximum efficiency.

There would be eliminated to a very large extent the contraction and expansion that necessarily must take place where the tubes and top sheet are subjected to such an intense heat as to cause a disintegration of the molecules of the steel, increasing the possibilities for collapse or bulging of the tubes and upper sheet.

2. The locomotive type permits a better application of the use of oil as fuel, as it provides a greater radius of heating surface and also the form of the boiler makes installation easier.

3. The chances for eliminating the fire hazard are also to be considered in the use of the horizontal boiler, as the sparks are not so liable to be exhausted through the stack to the same degree, on account of the reduced upward draft.

I would like to draw your attention to the fact that if this type of boiler was being used for wood or coal fuel, in connection with a baffle plate now commonly used in locomotives, a screen could be installed in the smoke box, which would doubly insure any escaping sparks or cinders, through the spark arrester now used on the vertical type. Will also mention that a hole or opening could be cut in the bottom of the smoke box and by making a connection with a sheet iron pipe, 5 or 6 inches in diameter, to the ash pan; this would keep the smoke box clear of all accumulating cinders which would go to the ash pan by natural draft.

4. In the locomotive type of boiler you can use a superheater, which will insure a saving in steam. This will mean, as stated before, a saving of fuel and labor and give better results and allow for the substitution of a feed pump for injectors. Injectors at best are not so reliable as a feed pump; and when you remember that you attain a degree of heat from 90° to 170° F. where a superheater is used the low-priced injector such as is in common use would be absolutely worthless.

5. The center of gravity in the horizontal type of boiler is very much lower than in the perpendicular. The boiler is more easily braced, and when it comes to movement, the chances for damage through toppling over are very much minimized

The argument might be advanced that the use of the horizontal boiler would necessarily increase the length of the frame of the engine. I do not think that this argument is conclusive, for this reason:

For the last two years I have been putting a 60-foot sled under any donkeys we have been operating. Mounted back of the boiler has been an oil tank carrying fourteen barrels of oil, and a water tank capable of providing us with about fifteen barrels of water. It would be my idea that in order to overcome the 5-foot additional space that would probably be necessary by the substitution of the horizontal for the vertical boiler, that we would construct a saddle tank on the boiler, in which one partition would carry water and the other the oil, thereby attaining the same compactness that is possible through the use of the present vertical type.

The benefit to be derived from mounting the oil tank on the horizontal boiler is the maintenance of an even temperature without the necessity of an additional heating apparatus.

Another advantage the horizontal boiler enjoys over the vertical type: You can not jacket the latter with asbestos without incurring to a more or less degree probable loss from pitting by reason of the water or steam getting between the shell of the boiler and the asbestos lining.

The accompanying drawing will assist to present more fully the advantages which would accrue from the use of the horizontal type of boiler. It would be my idea that in addition to the ordinary throttle now used, another throttle should be located in the steam dome similar to the practice now followed in locomotive building. The object of this emergency throttle is to insure absolute certainty in case of any accident to the operating throttle. At the present time an engineer on an ordinary logging donkey, if perchance, anything should get wrong with his throttle, must climb on top of the house, and reach the gate valves with considerable labor, to shut off the steam.

It will also be noted in connection with the proposed horizontal boiler that the hight from the base of the sled to the top of the smokestack is very much less than now encountered with the use of the vertical type. There would be a difference of about 5 feet in the hight of the boiler itself, and about 2 feet in the stack.

When you come to consider the number of movements a logging engine is required to make in a year, and the character of ground it must traverse, the factor of safety in favor of the horizontal over the vertical type is so great that this fact in itself is enough to commend it to every logging operator.

While the exhaust is used for superheating, it can also be carried to the smoke box to secure forced draft, where it can be regulated by a valve specially designed for that purpose. Some experiments along this line have been made with the vertical type of boiler, but without success, owing to its style of construction; therefore a blower has to be maintained, which necessitates the development of an additional amount of steam. On the other hand, with a horizontal type of boiler the blower can be used in conjunction with the exhaust, minimizing the amount of steam required to insure free combustion.

Steam shovel builders at one time used the vertical type of boiler, with a view of securing greater compactness, but after years of experience it was found that the horizontal type of boiler provided great steaming facilities, which overcame any supposed advantage of the vertical type, in so far as the economy of space was concerned. There was also manifest advantages both in safety of movement and operation. It was also found practicable to reduce the diameter of the boiler, by utilizing longer flues, thereby providing increased steam with lessened fuel cost.

Dr. Schenck at the conclusion of his address earlier in the afternoon had left his suitcase, filled with textbooks written by himself while he was attempting to master the game, on the platform. He now stated that the books were free for those that wanted them and the suitcase was donated with them.

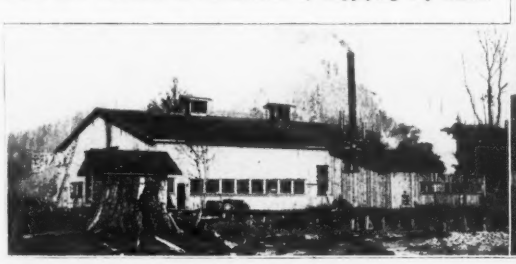
The session adjourned at 5:30.

THE WELFARE DINNER.

The second annual welfare dinner under the auspices of the Young Men's Christian Association was held Thursday night, in the famous hall of the Doges, at Davenport's cafe. The first was held a year ago, in connection with the Pacific Logging Congress at Tacoma, and was such a success in creating an interest on the part of the loggers in the welfare work that the Y. M. C. A. is doing, and is desirous of doing, that it was made a permanent feature of the congress. There were 142 in attendance, including several ladies, and the talks, while brief, owing to the limited time, were earnest and sincere testimonials of the practical efficiency of the organization's work for the betterment of the social as well as moral condition of the men who work with their hands in the great forests of the western country.

A. W. Laird, general manager of the Potlatch Lumber Company, Potlatch, Idaho, a firm believer in the value of Christian welfare work, briefly introduced John R. Tolle, of Missoula, Mont., at the head of the lumber department of the Anaconda Copper Mining Company, as toastmaster, and the latter expressed his enjoyment at being able to participate in such an affair. Letters and telegrams of regret because of their absence were read from Ernest Lister, governor of Washington, who had been expected to make an address, and from Ralph Burnside, of the Sunset Timber Company, Raymond, Wash., who has a very satisfactory Y. M. C. A. club house at the company's camp at Firland.

Mr. Tolle stated that Frank H. Lusk, a neighbor of his at Missoula, and an old-time railroad man, had expected to be present, but could not attend, sending a letter instead. This letter was read by J. B. Rhodes. In it, Mr. Lusk, who some years ago scoffed at the establishment of Y. M. C. A. club houses at railroad construction camps, expressed his strong appreciation of the great benefits to men, and efficiency resulting from



MACHINE SHOP.

BUNK HOUSE.

COTTAGES.

VIEWS OF BLOEDEL DONOVAN LUMBER MILL'S CAMP AT ALGER, WASH., AND TOWN ADJACENT WHERE MARRIED EMPLOYEES RESIDE.

the Y. M. C. A. work. He declared it deserved the support of every intelligent employer of labor.

The toastmaster spoke very highly of the Y. M. C. A. industrial work in introducing J. A. Goodell, of Portland, Ore., industrial secretary of the organization in the Pacific Northwest, and Mr. Goodell, with the aid of stereopticon views, explained what is being done by his organization in the logging camps of the West. A year ago when the first welfare dinner was given there were two welfare club houses in the lumber and logging industry, while now there are fourteen, indicating a generous percentage of growth. Mr. Goodell referred to Col. Goethal's assertion that the success of the construction of the Panama Canal was due to the welfare and *esprit de corps* of the men.

Among the pictures shown were those of welfare club houses of the McCloud River Lumber Company, McCloud, Cal., C. A. Smith Lumber & Manufacturing Company, Marshfield, Ore., Puget Mill Company, Port Gamble, Wash., Blodel Donovan Lumber Mills, Alger, Wash., Consolidated Lumber Company, Elk, Wash., and the Vance Lumber Company, Malone, Wash. He also illustrated the Y. M. C. A. Building in large industrial centers, and also in railroad and other construction camps, the first of the latter at an irrigation work camp near North Yakima. He showed pictures of the Y. M. C. A. club house at Doty, Wash., of the Doty Lumber & Shingle Company, and a similar one at Harrison, Idaho, maintained by several lumber manufacturing concerns there. Of the logging camp type, he showed pictures of the welfare club houses of the Sunset Timber Company at Firland, Wash., the Clear Lake Lumber Company, Clear Lake, Wash., and the Inman-Poulson Lumber Company, Kelso, Wash., and the Y. M. C. A. welfare car at the camps of the Potlatch Lumber Company. In concluding his illustrated talk, Mr. Goodell declared the Y. M. C. A. made better men and better citizens of those within the reach of its influence.

Employers Make Detailed Statements.

There followed some statements of employers. A. W. Laird told how Mr. Goodell had a year or so ago explained the welfare work to the late William Deary, the predecessor of Mr. Laird, and Mr. Deary had said that if it would do anything to help the men he was for it. Mr. Laird spoke highly of the result of the year's experience at his company's camps, not measured in dollars and cents but in the good it had done.

R. W. Mercereau, of the Doty Lumber & Shingle Company, expressed his approval of the Y. M. C. A. club house at that company's plant at Doty, and explained the nature of the work being done for its employees. It is the social center of the town, and the men and their families all participate in its benefits.

Q. P. Jones, superintendent of logging of the Potlatch Lumber Company, said that its men are all pleased with the benefits they are receiving from the club car at their camp.

B. R. Lewis, of the Clear Lake Lumber Company, said the company established a club house for the Y. M. C. A. at one of its camps last January and he believed the men liked it. Another camp did not have the Y. M. C. A., and while he believed it was a good thing for the men, it had not been demonstrated that it enabled them to put logs in any cheaper. The company is continuing the club house and hopes yet to prove that it permits of cheaper logging. As a matter of sentiment, Mr. Lewis favored it.

J. D. Young told of the Y. M. C. A. club house in the Inman-Poulson Lumber Company's camps. He declared it brought better men to them. If they wanted whisky bloats at their camp they would run them wide open as formerly, but the Y. M. C. A. club house and its influence were bringing a better class of men. Only recently he spoke to 70 men at his camp, and asked the men what they thought of it. Of these, 67 favored it, and 3 only were against it, and the expression was secured by unsigned written statements from them. He only wished that that club house was double its size. The expense was 1½ percent added to the pay roll, and he believed it added 5 or 6 percent more to the efficiency of the men, for they are doing 12 percent better at their camps this year than last year.

George F. Fox, of the Anaconda Copper Mining Company's logging department, Bonner, Mont., added his approval of the Y. M. C. A. logging camp work.

W. A. Sellwood, who had charge of construction camp Y. M. C. A. work, told of some of the experiences in this work.

Several employees of the Potlatch Lumber Company's camps told of their appreciation of the Y. M. C. A. camp work, including William Pollock and Tom Connelly. The latter, especially was enthusiastic in his praise of the great help to the men of James Lansburry, the Y. M. C. A. secretary at their camp. He is their first aid, he declared.

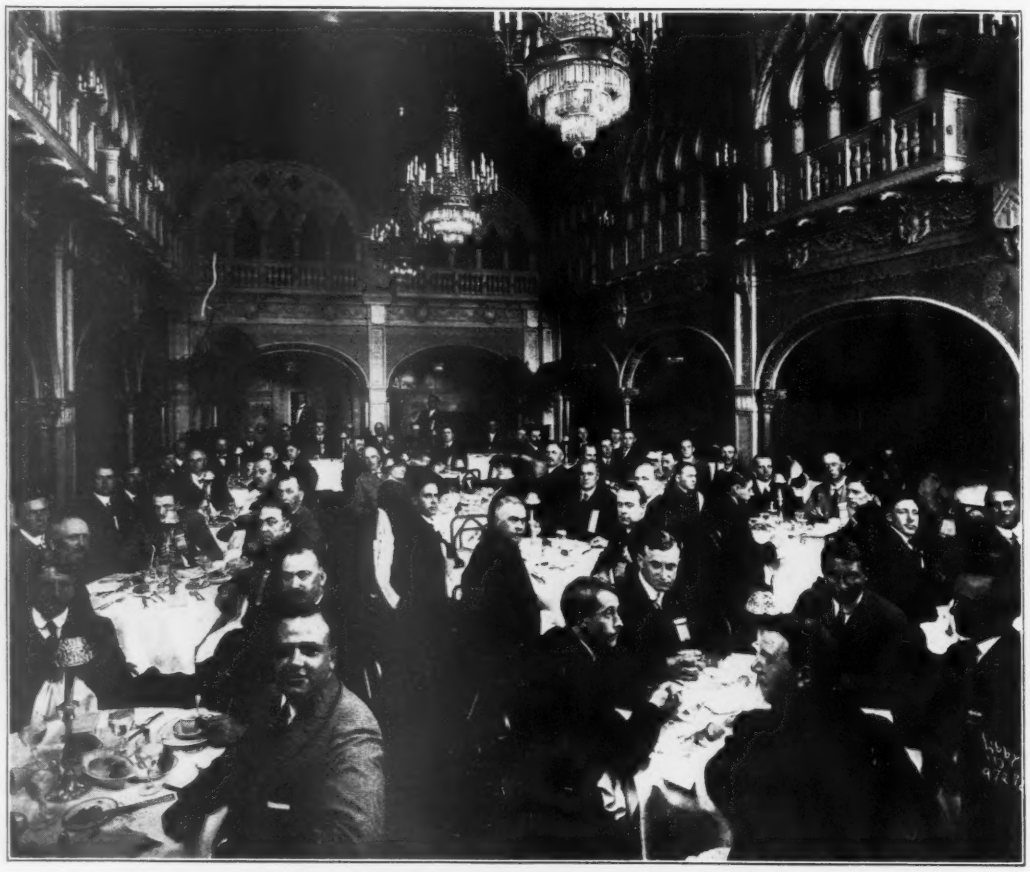
Secretary Lansbury spoke briefly owing to the limited time. Born in the heart of London, he is now a worker in the Y. M. C. A. logging camps. He declared he had always supposed he was the black sheep in the family until he read the August *McClure's* and learned that the rest of his relatives in London were in jail as suffragettes. He spoke strongly and fervently, declaring at the outset that he could better talk to lumber jacks. The experiences he related kept his auditors interested and amused.

"The Y. M. C. A. in the logging camp is practical. If I had a year in Mr. Lewis' logging camp I would guarantee to make logs cheaper or work for nothing," declared Mr. Lansbury, in conclusion, as he sat down amid a burst of applause.

Mr. Toole, in closing the meeting, expressed his earnest approval of any movement such as this, designed to bring about the moral and physical betterment of a class of men that need such help.

FRIDAY MORNING SESSION.

Friday morning's session was called to order about 9:45 by the presiding officer, J. J. Donovan. The secretary read more telegrams of regrets and also one from President E. P. Blake, urging that the congress take some action toward securing chairs of logging engineering in western universities and colleges.



THOSE IN ATTENDANCE AT THE WELFARE DINNER IN THE HALL OF DOGES.

The Chair then introduced B. R. Lewis, of the Clear Lake Lumber Company, Seattle, Wash. Mr. Lewis' address was on the program for Thursday, but its delivery was postponed until this session.

"Our idea in constructing camps is to take care of our men and make them as comfortable as possible," declared Mr. Lewis. "We do not humor them but keep them in their natural element and make them feel at home but insist on their paying for what they get." Continuing he said:

Our company has two types of camps. Camp 1, located on the south side of the Skagit River, at an elevation of about 500 feet, is composed of fourteen bunk houses 12 by 26, built on sleds, extending four feet from the bunk house in the rear and six feet on the front, so they can readily be loaded on cars. The sleds are put together with two cross timbers and bolted with three ¾-inch rods. The bunk houses are built with joist, studding and rafters two feet apart, sheeted with No. 2 shiplap, sided with 4-inch D. & M. put on perpendicularly, and a shingle room. The floor is 2 by 4 D. & M., with one window in the rear and two in the front and one door.

Each bunk house is furnished with six double steel bunks with springs and mattresses, with capacity of twelve men, and one 26-inch stove.

In addition to this we have a wash room built separate 14 by 24. We have a bath-room and dry-room 12 by 36 feet. The dry-room is 12 by 24 feet, furnished with a large heater with twelve 1-inch coils. A 100-gallon tank in the bath-room is 12 by 12 feet, and is furnished with three shower baths and an 8½-foot galvanized iron sink. This is one of the most popular features that we have at camp.

For Recreation, Health and Comfort.

We have a Y. M. C. A. building built in two sections so it can be loaded on cars the same as the other buildings; the two sections joined together are 24 by 40 feet. The company pays the secretary and furnishes the light and heat and the men furnish the paraphernalia. They now have two pool-tables, phonograph, and they take about thirty daily, weekly and monthly papers and magazines, and they have a library of about 650 volumes, together with a clothes press, punching bag and games of different kinds.

Our office and commissary is built in the same style as the other buildings and is 12 by 40 feet. We have another building 12 by 36 feet which is for the foreman, clerks, etc. Another building 12 by 24 is for the superintendent and the management.

Our main dining room is 24 by 76 feet. Our kitchen and rooms for the cook-house force are 26 by 46 feet. Our buildings are all lighted with electricity. Our dynamo house is also made portable as well as the tool house, warehouse and filing house—everything with the exception of the cook-house. The next cook-house that we build we anticipate building it in sections so it can be readily moved.

Camp 2 is built at an elevation of eleven hundred feet and is built permanently on the old plan, but is very light and roomy. The bunk-houses are furnished with iron beds, springs and mattresses, each house holding about forty men. The cook-house is on the same plan as that at Camp 1, with the exception that it had a little more light in it, making it much more pleasant, which I consider is a very good idea.

We have a shower bath and dry-room at this camp, but no Y. M. C. A. building. The office is built on about the same plan. We furnish both the camps the same and it is hard to tell which gives the more satisfaction.

After a careful study given the Y. M. C. A. at Camp No. 1, he said the company could not become reconciled to the fact that it keeps men any longer, or gives any more satisfaction to a crew or, in other words, enables it to put in logs any cheaper. He said be considered camp buildings and equipment a business proposition. The only reason he found for bettering equipment, camp buildings, etc., is to enable him to deliver logs to the mill at the lowest possible price. His experience has taught him that no matter how good the accommodations and board, unless men are made to pay well for them and unless the company maintains good discipline it will not be able to accomplish these results.

In conclusion he said:

When you find a foreman who will apply himself to modern methods of putting in logs and at the same time holds the men down to the old method of discipline you will find a man that gets better results for his company.

We have had too much prosperity generally and the lumbermen are not sufficiently organized to protect their own interests. I believe that the men should be given good board and good, comfortable accommodations—this should attract the better class of men—and then run our business with a strong hand.

Rules for Handling Employees.

I have given our superintendent instructions when a man was maliciously destroying our tools or other equipment to charge him up with the damage he had done; when he neglected his duty to discharge him and dock him for his time. We have established a rule that every man must give notice the day before he leaves our camp and every man in an important position, such as cook, blacksmith, hooktender, loader and engineer, etc., who left our employ without giving us time to get a man in his place we would not settle with. If such rules as these were put into effect by all lumbermen I think it would increase the general efficiency of all our men; also requiring those in important positions to have good records before they could assume a higher position with an increase of wage. This is all up to the loggers and lumbermen themselves. As it is now, every man is for himself and does not try to work with his neighbors; the men are better organized than their employers. I believe in being just with the men and in forcing them to be square with the company.

H. J. Robinson, Portland, Ore., of the Westinghouse Airbrake Company, was also on Thursday's program, but remained over and delivered his address Friday morning.

That there are other reasons for the existence of the air brake besides merely being a safety device was asserted by Mr. Robinson in an address on "Handling Air." He made the somewhat startling statement that the brake under a single car is more powerful than the locomotive which pulls the train. This, however, he said is a proven fact. He pointed out that it takes a locomotive and ordinary passenger train from five to ten minutes and a distance of from five to seven miles to attain the speed of sixty miles an hour, while it is possible to stop the average passenger train in about twenty seconds and not less than 2,000 feet. To illustrate, he said that to stop a train consisting of two locomotives, weighing 194 tons each, and ten passenger cars weighing 75 tons each, running at the rate of 80 miles an hour, sufficient energy is used to lift a weight of one ton over 48 miles or to lift a weight of 737 tons to the top of a building 347 feet high. He mentioned this to show the importance of the air brake, not only as a safety device but as a vital factor in the transportation problem. He pointed out that it would be impossible to operate modern, heavy and long trains at speeds which are now common, if it were impossible to dissipate quickly the energy stored in the train, as is done by the means of the air brake.

On the subject of handling log trains on down grades he said that perhaps the most simple solution is to increase the braking power on the cars to between 100 and 125 percent of their light weight; then by means of a double regulation of brake pipe pressure use a low pressure when handling empty cars to avoid sliding the wheels and a higher pressure when handling loaded cars, in order properly to control the speed when descending grades.

He declared that the holding of brakes for long periods should be avoided in handling trains when descending grades. Some of the points to be considered in this connection were outlined as follows:

The brake work required for a stop increases much more rapidly than the speed. This may be illustrated by the fact that with present form of passenger equipment a train running at 60 miles an hour can be stopped in about 1,100 feet, but that if the same train is running at 80 miles an hour and the same brake applied with the same force it will still be running 60 miles an hour at the end of 1100 feet or at the point it was stopped from the speed of 60 miles per hour.

On a descending grade a certain portion of the braking or holding power is required to prevent an increase in speed. The accelerating force, due to grade alone, is 20 pounds per ton percent grade, so that it may readily be seen the work required of each brake to prevent a gain in speed increases with the weight of the load. Should there be any cars in a train having poor holding brakes, the weight of such cars is added to that of the cars having good brakes and increases the difficulty of properly controlling the speed of the train.

A train can not be said to be under proper control if it is barely possible to prevent the speed increasing, as the holding power available for stopping a train is that in excess of what is necessary to prevent a gain in speed. As generally understood, a train is under control when it can be brought to a stop in a reasonable flagging distance.

Amount of Pressure Obtainable.

The amount of pressure obtained in the brake cylinder depends on the amount of pressure in the auxiliary reservoir at the time the brake is applied and as the pressure reaches the auxiliary through a small groove in the triple valve, sufficient time should be allowed to replace the air used in a previous brake application before again applying the brake.

The braking power available depends upon the amount of pressure admitted to and maintained in the brake cylinder, and in order to hold the pressure the brake cylinder and its connections must be tight and the packing leather in good condition. Quite often the latest improved brake equipment is purchased at considerable expense and then the efficiency of the equipment impaired by lack of proper

B. R. LEWIS, OF SEATTLE, WASH.;
With the Clear Lake Lumber Company.

maintenance, and it can be readily understood that if brake cylinder leakage exists all of the other brake apparatus is useless so far as its ability to control the train is concerned.

Retaining valves are an important factor in grade work and should be maintained in good condition, and all used when descending grades. The value of the retaining valve will be better understood when it is stated that the 15 pounds pressure it holds in the brake cylinder equals nearly one-third of the total brake power possible to obtain on a car with a full service application from the usual standard (70 pounds) pressure, and in addition helps to hold the train while recharging the auxiliary reservoir by reason of blowing down brake cylinder pressure slowly when the brakes are released.

In order to determine if all brakes are performing the work expected there is no better plan than that of feeling the wheel temperature on arrival of the train at the foot of the grade. Should the wheels under any car show a lower temperature than the average for the entire train it indicates that the brake on the car is in poor condition. (This is termed the "Thermal Test" and is more reliable than any other known, but can not of course be made when hand brakes are used in conjunction with air brakes.)

Much could be written concerning the subject of "Air Brakes," only a very few of the points which it was thought might be of interest having been covered in this paper, but the writer wishes to take this opportunity of advising that it will be considered a pleasure at any time to render any possible assistance in air brake matter to logging roads.

Mr. Robinson's address was received with a great deal of interest and at its conclusion Mr. Donovan called especial attention to a statement in the address that a train properly equipped with brakes, when running 60 miles per hour, could be stopped within 1,100 feet, but the same train running 80 miles per hour with these brakes applied would still be running 60 miles per hour at end of 1,100 feet. Mr. Donovan also said that although George Westinghouse had made modern railroading possible, many of the best informed railroad men do not ride on the fastest trains because of the above condition.

The Chair called E. T. Allen to the floor, saying that the forester was so well known he needed no introduction.

That the forest industry is, in a final analysis, an entity is a truth less realized in America than in older countries, was the statement made by E. T. Allen, of Portland, Ore., in his address on "The Latest Devices for Forest Protection." Man needs wood in various forms, he said, and to make the earth supply it, adding such labor as is required to make it available and suitable for his use, is a business. Convenience, he pointed out, may require that it be conducted by one unit of management, as when the small concern cuts its own timber and retails it to local consumers, or by several, as when timber, logging, manufacturing, shipping, transporting and retailing are each under separate proprietorship. The latter system, he said, might produce some conflict of interest between its units but it can not possibly destroy the greater mutual interest of all branches of one business. In the long run the prosperity of all has a common basis and this must include perpetuation of the resources dealt with, economy in their process and just payment by the consumer for the service rendered.

Continuing he said:

Everyone of these three things involves more than is under the individual control of any unit. It involves the influence of the other units and of the public. Consequently you as loggers should be interested not only in the economies of your own processes, which this congress is called primarily to discuss, but also in the progress of forest protection and its incidental work of public education in many things that affect the industry as a whole. And while latest devices for fire fighting are what I was really asked to report upon, I believe there is quite as much real development by protective agencies along other lines, and that there is perhaps even more need for us all to understand its trend and object.

Growth of Coöperative Patrol Movement.

The coöperative patrol movement in the Pacific Northwest has had phenomenal growth. It is only about seven years since the forest protective association was formed by a few timber owners in the Coeur d'Alene district. Their plan did not go beyond cheapening and improving a local fire patrol. Now there is a chain of similar associations from the Montana Rockies to northern California patrolling over 20,000,000 acres, employing many hundred trained men, and spending hundreds of thousands a year. They protect about 500,000,000,000 feet of timber, or a fifth of the Nation's entire supply, and keep the loss down to so negligible a figure that it can hardly be expressed in terms of percentage.

Coöperative patrol has proved so successful that even in these few years it has established a wholly new channel for the direction of public forest protection policies, State and Federal. Once almost regarded as disciplinary and directed at lumbermen, necessarily originated and executed without consulting their interest, forest legislation is now mainly along the lines of strengthening a team relation between lumbermen and official agencies, one which shall utilize private interest and competence to the utmost. The associations have legalized official standing as representatives of the State or Government. Whereas, at one time the effort was to collect from forest owners funds to be expended by public officials, it is now rather to discover ways in which private protective systems can serve as the most efficient agencies for public expenditure. They are also consulted as to punitive laws and constituted a constabulary to enforce them.

I sometimes wonder whether the true significance of this change is realized. It means that those Coeur d'Alene men unwittingly discovered a gate through which forest industry is passing the barrier of public misunderstanding and distrust to take its rightful place in the community as a useful and commendable industry. Certainly it has not its rightful place until its voice is welcomed and respected in all men's councils that affect its welfare. To have such a voice in strictly protective affairs is not so old or trifling a thing that we should accept it without gratification. It is infinitely more important that it is also the voice of all forest industry, earning an influence in all affairs that affect the lumberman, whether the making and enforcing of laws or of that which is greater than law—public sentiment.

Alliance Formed to Carry on Patrol Work.

When the extending and improvement of coöperative patrol became of recognized importance, the pioneer associations allied in the Western Forestry & Conservation Association to maintain facilities for this purpose and also for carrying on a campaign of public education in the fire evil, so there might be fewer fires to find and fight. To some of you, perhaps, it still symbolizes these things only. You know only of its forest fire conferences and its precautionary material that reaches the reading public. To such, before passing to devices for fire prevention, I want to speak of the system by which our organization assists you in these other things I have suggested.

The truth is that the work of the central association is now chiefly along these other lines. Its part in developing local fire work is practically accomplished. Of twenty-five local associations on the Coast (seventeen in Oregon alone) only the original five in Idaho and Washington do not owe their existence to its organizing influence. To a large extent it shaped the laws and appropriations under which they work. It has facilitated their exchange of methods to increase efficiency and by its educational work done much to prevent carelessness with fire from overtaxing methods and funds. And it still contributes perhaps as much as ever in most of those directions. Yet in the nature of things it must do so with less proportionate title to credit and more anonymously. It would fail did it not built up independent efficiency among the locals and, obviously, since it is they who must maintain membership and make assessments, it must let them utilize to the fullest every opportunity to point to success in local matters outside of their fire work, even if the central association is really the prime mover.

Consequently the Western Forestry & Conservation Association is more and more assuming the less spectacular but no less necessary functions which, for similar expedient reasons, the locals can not perform. It has been the chief promoter of reciprocal relations between associations, State and Federal protective agencies, not only locally but in such matters as securing large sums for Northwestern States under the Weeks Law. It represents western forest interests in all national affairs. It conducts studies of forest taxation. It sees that the progressiveness of the Pacific forest owner and the safety of Pacific timber are known all over the United States, doing so by personal representation, by skilful publicity, and by exhibits at numerous eastern expositions. Inquiries as to methods come from as far as Russia and Tasmania. It keeps in touch with similar forest owners' organizations in the Lake States, the East and Canada. Through newspapers, magazines, conventions, clubs, commissions and public boards, it utilizes every opportunity to reach our local northwestern public.

In short, no matter what or where the tendency or the crisis, western forest industry is assured representation which is not suspected of ulterior motive but welcomed because it is kept scrupulously free from any but mutual private and public interest. And throughout it teaches this true principle—that not forests but forest industry is what America really seeks to perpetuate; that there is no object in growing or preserving forests without at the same time affording justice and stability to the industry that alone can make them useful; and that it is one great industry which can not suffer undeserved injury in any branch without injuring all and eventually the public.

Mr. Allen told briefly of the work of the National Conservation Congress, which he said was a gathering of prominent and influential people from all over the country, and which should have much power but has at times degenerated into a political arena and at others into a narrow and not very constructive discussion of subjects in which lumbermen or foresters have only a general interest, if any at all. He urged that the lumber industry of the Pacific coast should have a voice in National Conservation Congress affairs and said that this year the meeting in Washington, where the congress will have unusual influence, is to be devoted largely to lumbering and forestry, discussed by people who are a part of them and know what they are talking about and with funds for giving the information wide publicity.

Returning to fire prevention in the woods and around the camps, the speaker said, that never in history has there been such rapid advance in technical methods as since, State, Federal and private fire fighters have attacked the problems jointly and with full knowledge of each other's inventions and with a spirit of friendly rivalry.

Of the Oregon compulsory patrol law he said:

In reviewing progress since our last meeting perhaps the most notable innovation is the Oregon compulsory patrol law enacted last winter. Every timber owner must maintain a patrol as good as do 51 percent of his neighbors, or the State may do the work and collect a maximum of 5 cents an acre in the same manner that taxes are collected. The State forester has platted the entire private ownership of the State and of those not already doing good work requires that they install patrol or join an association. He encourages the latter course. There has been surprisingly little objection to the law and so far no necessity of State action. Although to learn ownership and get things going has taken much of the season, about 3,000 owners are now paying into the associations for the first time. The State also contributes to these associations.

It was a comparatively easy season judged by modern standards, for losses were negligible—probably the least in northwestern history. We must not forget, however, that this was not all due to the weather. In old days, as much dry windy weather as we had this year always did much damage, for there were countless smouldering fires for it to fan up and no machinery for jumping on them. It means that protection is so good now that we don't have to worry except in a very bad year. But the bad year will come and there is none the less need for constantly strengthening our defense to meet it. A good year gives just the chances needed for perfecting details we can not touch when overworked.

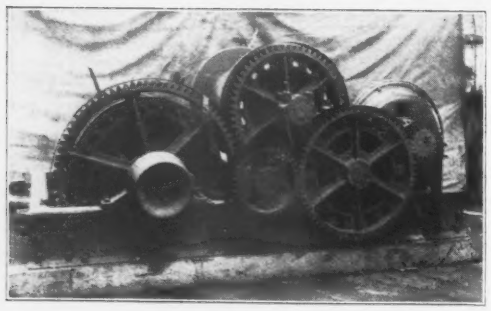
He told of progress being made in telephone and

E. T. ALLEN, OF PORTLAND, ORE.;
Forester.

trail building and especially in equipping lookout stations. He spoke of the various devices used in locating and coping with fires and said it is well known that the greatest fire danger lies in the high, dry interior wind known all over the Pacific coast under different names. It is the "Chinook" in spring or winter; the "east wind" of the Cascade region; the "norther" of California, and east of the Columbia Basin is likely to be deflected eastward up the Idaho mountains. This, he declared, has caused most of the disastrous sweeping fires in recent years and as the facilities for handling ordinary conditions are becoming adequate, it constitutes the greatest future hazard. The city fire department, he said, may seem perfect but an earthquake may burn a San Francisco and no forest region subject to a wind like this is wholly immune from a Hinckley Gaudette, or Coeur de'Alene forest fire calamity. In speaking of the value of the Weather Bureau as an asset to fighters of forest fire, he said:

The Weather Bureau, the Forest Service and the Western Forestry & Conservation Association have just inaugurated a study of the possibility of accurately forecasting this wind and distributing the information to loggers and protective agencies so that if conditions warrant camps can be shut down, burning delayed or other precautions taken. Generally speaking, it should be simpler than most weather predicting, for the conditions producing the wind are interior, not at sea, and can be observed. They consist of a high pressure area in upper British Columbia or Alberta coincident with a low pressure area in the California region, causing the flow from one to the other of a violent interior air current which carries no moisture and is consequently exceedingly drying.

Theoretically, all that is necessary to forecast this is promptly reported barometrical readings from both regions and we have taken steps to secure the coöperation of the American and Canadian weather officials in this respect. Practically, there may be difficulty in getting proper reports from the sparsely-settled portion of the northern area and also in calculating local exceptions to the general current. Certain parts of our territory are affected by such a wind under general and determinable conditions but others may have the general wind diverted by other pressure areas or be subject to dry winds caused wholly by the latter. Until these questions have been further studied it is hardly wise to attempt systematic forecasts, for mistakes in the



ELECTRICALLY OPERATED DONKEY USED BY POTLATCH LUMBER COMPANY.

beginning would brand the project as impractical and only annoying. But we hope that by next season something will come of the investigations being made by District Forecaster Beals, in charge of the Portland Weather Bureau office, who has been authorized to work it out if possible. I may say here that some of the Idaho patrol associations are also experimenting with local barometer readings.

Advisability of Burning Slash.

This was not as good a season as hoped for slash burning, but a great deal has been done, experience has been gained and belief in its advisability strengthened. There has been a marked tendency to tighten up on summer burning and burning without permit. We are realizing that the slashing is our greatest menace. There has never been a year in which slashing fires were checked so quickly and watched so carefully until rain fall. There has been quite wide adoption of camp fire rules, specifying in print the responsibility of all employees and emphasizing that preventing fire comes before getting out logs. The experiment will probably result in improved rules next year.

If there is anything needed in the average camp, especially now that the woods are full of patrolmen, it is a clear understanding of the foreman's responsibility for fire. He can not be blamed if, considering getting out logs the work upon which he is judged, he is reluctant to let anything interfere with it. His duty when this involves fire risk, both individually and in relation to the demands of fire wardens, should be most clearly laid down by his employer. Given such an understanding he often has the best possible judgment in the premises, but not always. Sometimes he does not know as much about fire risk as a specially-trained firewarden. Whichever the case, the responsibility should be fixed in advance.

I do not think the time far distant when every logging camp will have a fire plan, as specific as the safety equipment and drills aboard ship, including, not only every safeguarding appliance and the movements of the men in case of fire, but also precautionary planning of all operations. We do this with a mill. It is far more important with the material that supports the whole industry.

The protective branch of forest industry is no longer merely the patrol of mountain slopes by the owner. While he is reducing that end of it to a science, protection is in the nature of things being forced to serve more and more as the interpreter between all forest industry and the public, and to remove every hazard for which the industry itself may be held responsible. It must deal more and more with the logger and needs not only his support but also his technical thought and advice. We are all in one business and it pays to safeguard it. It is also more or less the public's business, and if we don't protect the public it may take a hand in ways to make us regretful. The more sincerity and ingenuity we all devote to forest protection, in field and camp, the sooner will lumbermen as a class reach a position where their voice will be welcomed as that, not of greedy acquirers and destroyers of trees, but of most useful servants of the commonwealth, deserving its reward for fostering and furnishing one of life's essentials.

The next subject on the program was electric logging and E. J. Barry, now electrical engineer for the St. Paul & Tacoma Lumber Company, Tacoma, Wash., formerly with the Potlatch Lumber Company. In his address on "Logging by Electricity" he told of the installation of two electric logging engines last year by the Potlatch Lumber Company, of Elk River, Idaho, and the results obtained. He said:

The logging engines were especially designed and built for electric drive by the Willamette Iron & Steel Company, Portland, Ore., for use with what is known as the McFarlane Skyline system. The McFarlane system is especially adapted for use in countries where the logs have to be removed from steep hillsides. A one and a half inch steel cable is anchored to standing timber on the crest of the hill the other being fastened to the hoisting drum of the donkey. This cable may be carried out a distance of 4,000 feet under favorable conditions; that is to say, where the weight of the trailing log will not cause too great a sag.

A carrier or trolley attached to an endless line brings in the logs, clearing the entire hillside within the limits of its travel. When one portion has been cleared the main cable is moved to a new location, and so on until a radius of from 3,000 to 4,000 feet has been cleared of timber. The logging engine may remain in one place for two or three weeks and thus save the expense of moving continually, which the older method of ground haulage involves. Also the logs are in much better condition for the sawmill when they have not been hauled bodily over gravel and rocks. Pieces of gravel are embedded in the bark with disastrous results to the saws when they come in contact. The skyline method permits of much faster handling as the logs, having only one end trailing, are not likely to encounter obstacles.

Electrical Equipment.

The electrical equipment of each machine consists of one 150 horsepower General Electric, form M, 550-volt, 600 R.P.M., 60 cycle, 3-phase wound, secondary logging type motor, equipped with solenoid brake. The motor is totally enclosed and of very rugged construction to withstand the exceedingly hard service the work involves. The control consists of a seven-point controller connected to a bank of resistance grids located in the rear of the skids on which the machine is mounted. The controller also operates the primary circuit, making the drive self-contained.

As a safeguard, a time element oil circuit breaker switch is also installed together with an ammeter mounted in view of the operator who is thus able to determine the safe stresses he can place on the steel cable. In practice it has been found that the cable is the weak link in the chain, the motor being able to take care of any and every load applied so far.

The brakes are operated by air, from a Westinghouse compressor driven by a 7½ horsepower motor. Compressed air also operates the signal whistle, a very important feature of logging equipments as in most cases of long haulage the operator can not see the load on starting, but must depend on signals given by the block-tender as to what he has to do.

Power is transmitted at 11,000 volts from the sawmill power plant located three-and-one-half miles from the present logging operations.

A portable substation mounted on flat cars as shown in photographs steps down the voltage to 600. Power is then supplied to the motors by triple conductor 000 cable steel armored and lead covered.

Expulsion fuses and horn-gap arrestors protect the primary side of the 200-kilowatt three-phase, oil-cooled transformers.

Line Construction Simple.

The line construction has been made as simple as compatible with safety and inclusive of all charges, clearing right of way, material and labor, but cost of land not included, amounted to $767 a mile.

The average daily haul for April this year was 33,000 feet for No. 1 donkey—an excellent showing, everything considered. On May 13, the machine under test brought in 55,000 feet of logs establishing a record. When certain mechanical defects in the equipment have been rectified it is expected that this record will be exceeded. The rate of travel of the trolley at present is 1,000 feet a minute, hauling in an average load of 1,700 log feet. It is expected to increase this rate of travel to 1,200 feet a minute on the new carrier shortly to be placed in operation.

It is to be remembered that the white pine logs in this district are small compared to the fir and cedar of the Coast timber, where the distances hauled would have to be shortened considerably.

For the test a curve-drawing wattmeter was used with an indicating wattmeter as check; an ammeter and voltmeter were used to check power factor. Running out light the carrier showed an average power input of 84. Hauling in logs scaling 1,000 to 1,500 feet showed an average power input of 139 horsepower. Loading logs on cars averaged an input of 107 horsepower, power factor equal 68 percent average.

Added Equipment Would Save Time and Power Consumption.

A decided saving in time and power consumption would be effected by using a separate motor and light hoisting apparatus for loading and so permit loading and handling at the same time. At present the one hoist has to do duty for both operations for which it is not suited. A 50 horsepower motor would have ample capacity for loading logs either on railways or cars.

The advantages of electric over steam haulage can be summed up briefly: No fuel required, with consequent wastage of good lumber averaging about 1,000 feet a day for each engine; elimination of fire risk in the forest; power labor costs, no fireman or wood cutters required to supply fuel; no freezing of boiler tubes in winter and consequently no charge for night watchman in cold weather; maintenance costs less than with steam. Boilers have to be washed every two weeks and engines with reciprocating parts are harder on upkeep; no water required. This is often a serious item, it being necessary in many cases to pump water for a distance of two miles; no delays to get up steam and no shut downs through failure to pressure, a frequent happening on very long hauls; no danger of boiler explosion; greater adaptability in regard to speeds which can be increased beyond standard engine speeds presently in use.

This is an important point that will be recognized by all logging men, from the fact that the steam donkey is being built larger every year to give higher rotative speeds to increase the speed with which logs can be brought in. The speeds of reciprocating engines of the logging type appear to have reached a maximum owing to the great weight of the apparatus built to stand the racking strain which these speeds impose. On the other hand the speeds of motors are peculiarly adapted for fast work from the absence of reciprocating parts and adaptability for speed control.

Speed Variation With Efficiency an Essential.

Speed variation with efficiency is an essential feature for logging work. There are places where logs must come in at the utmost speed available and others where a slow pace is necessary. The electric motor of proper design fulfills these requirements more completely than any other mechanical appliance. The output of each machine can be standardized readily; the output of steam donkeys will vary in ratio to the attention paid to proper firing; it is estimated that a saving of at least 50 cents a thousand would be effected.

During 1911 the St. Paul & Tacoma Lumber Company, between contracts and camps, hauled 81,000,000 feet log scale. On combined operations the gross saving would be $40,500 from which the cost of energy would have to be deducted.

Our records average 10-kilowatt hours for each one thousand feet logged. This varies somewhat but is sufficient for practical purposes; 810,000 kilowatt hours a year at a rate of 1.5 cents equals $12,150; $40,500 minus $12,150 equals $28,350 saving, effected even at a minimum of 50 cents a thousand. The saving in elimination of one of the gravest fire risks can hardly be estimated in dollars and cents, but would pay a heavy interest, no one can doubt.

The Smith Power Company, of Marshfield, Ore., will have its electric logging engines in operation next summer when data dealing with Coast timber will be available.

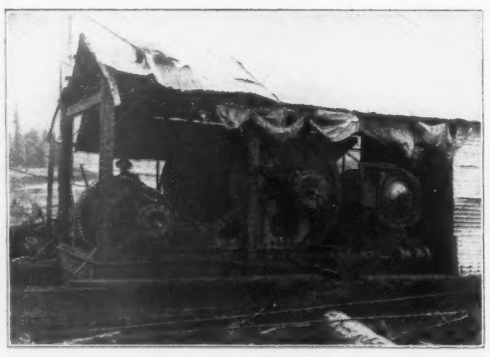
The development of logging by electricity will prove a valuable help from the central station point of view, especially on the Pacific coast where transmission lines from hydro-electric plants pass through extensive logging areas. Naturally it is an off-peak load and continuous enough to be well worth trying to secure.

Following Mr. Barry, E. F. Whitney, of the General Electric Company, Portland, Ore., was introduced and delivered a very able and interesting address on the "Development of Electric Logging Machinery."

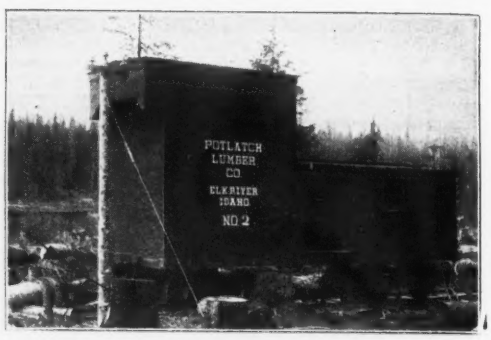
That pioneer applications of electricity always encounter a natural skepticism as to their success was the contention of Mr. Whitney. He declared that the trials are always under the most difficult and unfavorable conditions.

In logging work, he said, there is a demand for a machine which embodies all the most desirable characteristics which can be produced, with also the demand that no one of these be sacrificed in favor of any other. Continuing he said:

What piece of machinery more exactly fits these conditions—all of them—than an electric motor and, in particular, a 3-phase induction type motor? Progress in its introduction, however, has been slow, because pioneering work which returns large rewards seldom has substantial support until it has, through its own efforts, proved itself.



EQUIPMENT OF POTLATCH LUMBER COMPANY SHOWING BRAKE END OF MOTOR.



PORTABLE SUBSTATION OF POTLATCH LUMBER COMPANY.

He then briefly summarized the electric motor characteristics exactly suited to this service as follows:

A motor requires power only when performing work, eliminating all standby losses.

When working, the amount of power taken automatically adjusts itself to the demand. It follows that the period of service, and hence the depreciation, is less than in other types of motive power.

The maximum pull, which by design corresponds to or is above the rope breaking strain, can be and is made to come at any speed from standstill to full speed.

When working at full speed or at any other point of the controller a greater or less pull, as required, will automatically be exerted by the motor. It is thus sensitive to the demands of hauling conditions with very little change in speed. This means an increased production.

There is no time lag in waiting for steam or in the acceleration of reciprocating parts.

The motor starts, stops or reverses by the simple movement of a small handle through a short space.

It can be installed anywhere, without reference to water or fuel supply, and is always ready to operate instantly, irrespective of the length of time of shutdown.

In its design it has been made rugged enough to withstand being stalled without damage, should such occasion arise. In case of such a maintained condition an automatic overload disconnecting switch is provided and set just below the breaking point of the rope.

After complete disconnection from the lines the outfit is again ready for operation by simply closing the switch—a matter of five seconds.

The type of control has proved itself in hauling and hoisting operation. The simple drum controller daily demonstrates its reliability under severe conditions of railway service.

No transformation in quality of motion from motive power to work; that is, rotary motion only, and not a change from reciprocating to rotary motion, permits of higher working speeds and enables the outfit to better stand the strains of suddenly applied heavy loads.

The number of parts reduced to a minimum—all parts large and substantial.

Wearing parts are reduced to a minimum; these, viz., bearings and collecting rings—have no effect on the efficiency. This valuable point is determined and set by the designing engineer and cannot be changed.

Characteristics of operation are fixed by the designing engineer and not dependent upon the personal equation of the operator.

These are some of the inherent positive advantages of the motor. Among the undesirable things avoided may be mentioned:

Only one man required per outfit,
No boiler or boiler repairs,
No water to be piped and pumped to the engine,
No fire at the scene of operations,
No fuel supply to be provided in the woods,
Elimination of numerous supplies and parts.

With the foregoing as a basis and anticipating the additional advantages to be discovered in actual operation the speaker said he sent one of the company's engineers, conversant with heavy hoisting and excavating work, on an inspection trip through the timbered sections of Puget Sound, the Columbia River and Idaho. The results, he said, confirmed his belief in electric logging and preparations were begun to develop a complete line of machinery for such service.

Features of a Simple and Rugged Outfit.

Following are the features he said must be considered in constructing a simple yet rugged outfit:

Motor with a capacity for very high intermittent demands—demands reaching such values as a rope pull corresponding to 300 or even 400 percent of the normal pull for which the motive power was designed.

A compact and simple drum controller, as it would be impossible to keep in adjustment any control scheme embodying interlocking parts, even in its simplest form.

A substantial armored cable, that could be laid along the ground or even in water, leading from the service point to the motor.

An automatic brake to positively stop the motor rotating the instant power was thrown off—to prevent over-winding the cable.

In speaking of the advantages of alternating current, he said:

Alternating current, 3-phase motors were chosen because of first cost, ruggedness, light weight, few parts, minimum of attention required, available sources of power, simple substation equipment.

Direct current series and alternating current, single-phase series motors have many characteristics admirably suited to this service but the complications of transforming equipment, higher first cost of upkeep, and greater weight precluded their adoption.

Along this line the 3-phase, alternating current motor outfits have been produced for three nominal ratings, the particular outfit to use depending upon the work and type of logging engine. A brief description will show the salient features introduced to adapt the equipment particularly to logging needs.

The motor is totally enclosed, making it weatherproof. The shaft is large, giving strength required for rapid reversing service and rigidity to resist springing when transported over rough country. Removable covers with weatherproof gaskets over handholes permit of ready inspection. As a further precaution the windings have a special moisture-proof insulation. To obtain an idea of its capacity and operating flexibility, assume a motor such as used on a heavy duty wide or narrow drum engine, for instance, the 12 by 14-inch size.

Assume main drum diameter 36 inches, gear ratio main drum to motor 30:1. This assumption corresponds to a condition at full motor speed of a piston speed in the engine outfit of 680 feet a minute and a rope speed on the bare

barrel of the main drum of 185 feet a minute. Now let us assume a log being hauled at this rate of speed. One moment we will say it is passing fair ground; the next, encountering rough ground, or a stump, or other obstruction. When running at 185 feet a minute, rope speed, there is a pull on the line exerted of 36,500 pounds. Suppose we need a less or greater pull—the motor will automatically exert it with attendant conditions as follows:

Pull in Lbs. On main cable b. d.	Rope speed in Ft. per Min.
18,200	187
36,500	185
73,000	182
109,500	179
128,000	175

He told of the motor's flexibility and capacity and pointed out the conditions his company had prepared to meet. In conclusion he said:

During such a cycle no distress has been shown, because our power supply has not been limited to the output of a boiler the size of which is limited. We have assumed the highest working speed for such heavy duty. Suppose the topography of the country demands a slower rope speed. Any speed for the above pulls from the standstill up to full speed can be obtained by means of the other points of control. So much for the motor's flexibility and capacity.

The brake is of the automatic solenoid type. It applies itself whenever power is thrown off the outfit. A drum controller gives the necessary speed variation and also reverse rotation. Of necessity there must be slight burning at the contact fingers during the transition from one point to another. Proper inspection once a day to remove the burrs with emery cloth is all that is necessary. The contact pieces are easily removed for replacement and are inexpensive. The interior construction is similar to the controller used on street railway cars.

An automatic oil switch with an ammeter mounted on the cover serves to entirely disconnect the motor from the line for inspection or when a log becomes hopelessly jammed. When this switch is open the entire outfit is entirely disconnected from the line and may be handled and inspected as would be any other mechanical device composed of iron, copper, steel and brass. The ammeter presents to the operator a continuous indication of the exact work his machine is doing so that he may act accordingly. The switch is set by trial to trip out when the pull has reached the maximum value desired.

A motor-driven air compressor and reservoir provides for the signal whistle and also takes care of the pneumatically operated frictions. Thus the operator has complete control of the outfit with a minimum of exertion.

Special armored cable is made up in short lengths and connected together by a coupling that relieves the conductors of any strain in moving same. Similar cable is used for dredge work where it must often be submerged in water.

Substation Equipment and Electric Shock.

Substation equipment and its location will vary according to the conditions to be met. In the case of the Potlatch company and the C. A. Smith company we have the two extremes. In the first case, an individual portable substation for each logging engine; in the second, one stationary substation for each camp furnishing all the power used by the several engines. As much attention to suitable substation equipment has been given as to the logging motors themselves.

Following this paper, Mr. Donovan remarked that according to these papers—"electric logging has arrived." He then announced a ten minutes' recess and said that anyone tempted to leave should remember that the Scotch bard had promised a repetition of the musical treat of the previous day. Committees were urged to get together during the recess and lunch hour. He also spoke of the membership of the logging congress and said that heretofore anyone showing enough interest to attend and register was considered to be entitled to a vote. Now, however, the organization had reached a place where, while everyone is welcome to attend, it would appear that anyone interested enough to attend should become a member and contribute the $5 membership fee to the support of the congress.

The session was called to order again after recess at 11.50 and Dr. J. Chris O'Day, of Portland, Ore., was introduced. Mr. Donovan remarked that nothwithstanding Dr. O'Day was an Irishman the Scotch had allowed him to be put on the program, which under the circumstances was an honor indeed.

Welfare work and its value in logging camps was outlined by Dr. O'Day in his address on "The Loggers' Fire Box." He said the title of his address might appear facetious and lacking in dignity, and there probably would be some who would class his reference to one's stomach as a fire box as being vulgar. He said he chose this method to make his address nontechnical.

Just as the successful operation of various steam plants depends upon a good fire box under the boilers, so, he said, must men be equipped with good stomachs. Good combustion is necessary in generating the steam that will drive the engine from which the energy to turn the wheels must come. For that reason good fuel is secured. The next step is to see that nothing happens to the fire box wherein this fuel is consumed. There must be regulation of draft by tall stacks and adjustable furnace doors, which enables the firemen to regulate the intake of air, and all this, he said, is aimed toward the purpose of keeping the plant alive. Just as good fuel is necessary to the needed energy of a plant, so is good food necessary to the men. Imposing poor food upon one's stomach, he said, is analogous to throwing poor fuel into the boiler's fire box. This truth, he declared, is the backing of the undignified title for his address.

Briefly he described the various classifications of foods and analyzed each. He also told of the digestive organs, at no time losing sight of an opportunity for comparing the human stomach with the fire box under the boilers.

He told of the value of sanitation as a preventative of disease and cited the difficulty which forced the French Government to give up its work in constructing the Panama Canal after many thousands of dollars had been invested and told how the United States, by overcoming insanitary conditions in Panama, took the first great step toward the consummation of the link between the Pacific and the Atlantic Oceans.

He urged that all consumptives be kept away from camp and asserted that tuberculosis is more contagious than leprosy. He called attention to the fact that the white plague is a disease of indoor life, and said that if men are crowded into close sleeping quarters, those responsible for his congested condition are inviting the much-dreaded disease. John Barleycorn, he said, has been tried, convicted and found guilty of being one of man's greatest enemies. Just as the science of the profession, of which the speaker is a member, has traced many diseases to insect life, he declared it also has traced many more to the saloon. While money continues to dominate politics, he pointed out that the evil will continue not only to fill untimely graves with them, but, by its hellish affiliation with commercialized vice, their daughters as well.

The speaker then told of first aid to the injured, which, he said, was one of the fundamentals every man should understand. What the future holds as a reward for the present campaign of social hygiene, time alone will reveal, he declared. He pointed out that venereal disease is a part of social life to be found in all classes; wherein lies its source no one knows, but like the poor, it is always present. He cautioned those present against the army of quacks who prey on this particular class of invalids. He said that when the time arrives (and it is now in sight) that newspapers refuse this class of advertising, such quacks will be relegated to the junk heap of oblivion.

He referred to the disastrous wreck of the Bar Harbor express on the New York, New Haven & Hartford Railroad, which, he said, according to investigation, was due to an overworked engineer. He sought to impress those present with the fact that fatigue has a direct relation to many accidents and urged that every employer bear in mind that human energy, like mechanical energy, has its limitations. To illustrate the part that fatigue plays in the hazard of industry, he read an article, based upon German insurance tables, showing the percentages of accidents occurring during different hours of the working day. The table follows:

Time—	Accidents percent.
6- 7 A. M.	2.82
7- 8 A. M.	5.16
8- 9 A. M.	5.29
9-10 A. M.	6.04
10-11 A. M.	10.37
11-12 A. M.	10.31
12- 1 P. M.	3.81
1- 2 P. M.	4.84
2- 3 P. M.	6.73
3- 4 P. M.	8.07
4- 5 P. M.	7.65
5- 6 P. M.	8.48

In conclusion Mr. O'Day made an appeal for assistance in behalf of the honest and earnest profession

DR. J. CHRIS O'DAY, PORTLAND, ORE.;
Who Praised Welfare Work.

which is struggling to free itself from a vast number of pretenders, declaring the doctor who will sell his patient to a needless operation is no credit to himself or to his profession. Besides he is a dangerous man to his community. The doctor who demands a part of a surgeon's fee in case of a necessary operation is more often governed by the size of the rebate than the surgeon's ability. In the fight being made by the medical profession to eliminate this practice, he declared, the public must lend its aid.

At the conclusion of this address the meeting adjourned for lunch, as it was then past noon and other speakers on the program for this session were unable to be present.

FRIDAY AFTERNOON SESSION.

Friday afternoon's session opened at 1:45 with a return engagement of the ladies who had furnished the music the day before. If there was any such thing as taming "savage loggers" they surely would yield to the beautiful singing of Mrs. Freeze and Miss Allen, who were again accompanied by Mrs. Langley. In deference to the chairman and because of his special request on the day before, there was no dearth of Irish melodies. In fact when Mr. Strathern was called on to sing, as it was said by very unanimous and special request, he promised to attempt to sing an Irish song himself, but compromised when the time came by singing "Paddle Your Own Canoe." "Auld Lang Syne" with everybody standing and joining in the chorus finished the musical entertainment.

Thorpe Babcock, secretary of the West Coast Lumber Manufacturers' Association, Tacoma, while not on the program, was given the opportunity of telling the loggers what the lumber manufacturers propose doing to advertise lumber to the consumer and other ways, hoping to enlarge the market for their product, which would be of as great benefit to the timber owner and logger as it would to the millmen if it accomplished its purpose of creating a steadier and more staple price for their product.

Following Mr. Babcock, W. W. Peed, Eureka, Cal., submitted the following report for the committee on standardization of logging tools, which was endorsed:

REPORT OF STANDARDIZATION COMMITTEE.

Due to the inability of the committee to have sufficient number of meetings this work was not carried on as rapidly or as far as we had hoped to do, the committee practically only taking up the question of blocks.

For trip blocks we recommend the adoption of five different sized blocks with sheaves, as follows:

9"x1¼"x1 15/16" hub length 3";
12"x1¼"x1 15/16" hub length 3";
14"x1½"x2 7/16" hub length 3";
18"x1½"x2 7/16" hub length 4";
24"x2 "x3 7/16" hub length 5".

All of the above blocks to be grooved for ¾" line.

Yarding Blocks.

10"x2"x2 7/16" 3" hub; grooved for 1¼" line;
12"x2½"x2 15/16" 3½" hub; grooved for 1½" line.

Butt Chain Blocks.

16"x8"x3 7/16" 8" hub;
20"x8"x3 7/16" 8" hub;
24"x8"x3 7/16" 8" hub.

All of the above sheaves, if grooved for line, to take 1½" line.

We recommend that a copy of this report be mailed to the different rigging manufacturers and that they submit to the committee detailed drawings of the pins and shackles that they propose using in the above blocks, and that the committee develop from the information furnished a standard pin for each block so that the sheaves and pins and shackles of blocks of the different manufacturers will be interchangeable.

We further recommend that a committee be appointed to carry on the work started by this committee and suggest that they consider classification and adoption of standard drawings for clevises, wire rope sockets, swivels and if possible, hooks, or such other tools as in their judgment should be considered. It is also suggested that in view of the promiscuous use of the words "guaranteed" and "warranted" wherever possible to establish specifications or reasonable mechanical tests that this be done and that the P. L. C. guarantees or definition of the word "guarantees" be interpreted in accordance with these specifications.

We would also recommend that a committee of the logging engine manufacturers be appointed and suggest that they take up the following items:

1. Definition of the term "speed" so that all manufacturers may figure this in the same manner.
2. Uniform formula for figuring rope capacity of drums to be adopted.
3. Ratio capacity of trip line drum as compared with main drum should be uniform. Capacities of straw line drum should be determined.
4. Standard equipment in the way of fair leads, spark arresters, tools, etc., should be uniform as to equipment furnished with new engine.
5. Careful consideration of the various parts of machines should be given with the idea of getting up a dictionary of engine parts and terms.

The question of increasing labor efficiency was referred to as a big one with every wideawake manager and superintendent of any kind of a plant or operation by John P. Van Orsdel, of Portland, Ore., in an address on the "Merit System or Increased Labor Efficiency." He said his cost information showed 65 to 70 percent of his total cost of production as paid for labor and 30 to 35 percent for supplies, depreciation and overhead expense. He admitted that his company had let the big expense get away from it and devoted the greater part of its attention to improving its machinery and methods, which only represented one-third of its maintenance cost.

He said that while he knew what the company had done was essential, it had been "putting the cart before the horse." Satisfied labor and proper equipment, in his opinion, go hand in hand and are inseparable. He advocated the conduct of business in such a way as to attract the higher class of labor instead of the scum. Waste, he said, of any description is wicked, whether it be natural resources, supplies, or human effort. He pointed out that beyond all question the greatest waste in the world today is misapplied, misdirected, or useless human effort. As a key to all schemes for bettering the labor situation he advocated the instalment of some system whereby the ambitions of employees are aroused, either to make more money and save it, or to climb up in the world to a position of more responsibility and authority.

In any merit or bonus system, he declared, the employer being the most powerful dictator as to what the system should be, must bear in mind that fair play must be practiced at all times. He pointed out that in order to obtain any system of successful bonuses employers must first have a very good idea of what to expect. He briefly explained the system in use by his company, of which the motto is, "Fair Play for Both Employer and Employee," and an aim to have the employer and employee share the profit after the employer has received an output sufficient to pay a reasonable profit for the risk entailed and a return on the money invested. The result, he said, has been increased efficiency in all departments of the work and greater earning capacity for both the employer and employee.

The general rules of Mr. Van Orsdel's plan follow:

(1) No employee will receive any premium for his first month's work unless he came to our employ before the 7th of the month.

(2) If an employee leaves our service before the 15th of the month and has not worked eighteen days in the previous month, he will not be entitled to any premium; but, if he has been in our service eighteen days or over in the preceding month and it is after the 15th of the succeeding month before he leaves our service, he will be entitled to his share of the premium.

This premium will not be paid at the time of his leaving our service on the basis of the standing of the yarders at that time, but will be computed at the end of the month on the basis of the time he was at work, and the premium check will be forwarded to his address, which he must leave with the bookkeeper or time keeper. This is not put in with the idea of doing anyone an injustice but simply justice to those who stay when the going is bad.

To illustrate: Suppose yarder No. 1 had an exceptionally good show for the first fifteen days of the month, and it was apparent would only just about hold up to the standard during the rest of the month, due to the timber or ground not being so good, a man who was not square might quit, which would undoubtedly not be fair either to his fellow workmen or employer.

(3) The daily wages you were receiving January 1 will be your wages during the entire year. It is up to you to increase them.

(4) The highest premium that any one man will receive a thousand feet above the standard will be 12 cents, or

should a man's wages exceed $6 a day he would only be paid as though he was receiving $6.

(5) The scale will be made according to the scale rule that has been in use at this operation in the past.

The logs will be scaled by a man selected by the employer, but the employees have the right to call in a scaler and check up the employer's scaler's scale, if they are not satisfied; and if the two can not agree they can select a third man, whose decision will be final, and expense for these different scalers will have to be borne by the employees.

Any logs lost along the road will be back scaled against the yarder that lost them, and no credit will be given with the same.

(6) The crews must go out when ordered by the foreman; if they do not—the day will be charged up against them as a yarding day.

(7) Allowance for lost time will be made for delays beyond your control when they exceed one-quarter day. But no credit for lost time will be allowed for delays of a few minutes which occur now and again in any logging operation, or to be more explicit, we will not pay premium on logs we do not get.

Overtime.

(8) In order to make it fair for all parties concerned, the rigging crews will be limited as to amount of overtime.

On a basis of twenty-five working days a month the rigging crews will be allowed twenty-eight days; twenty-six working day month, twenty-nine days; twenty-seven working day month will be allowed thirty days.

This overtime will be based on the time shown on the books for four men in each crew as follows: Hook-tender, head rigging rustler, second rigging rustler, and first choker setter. No overtime limit will be put on the donkey engineers loaders and train crews, only within the judgment of the camp foreman.

(9) The premium will apply to all men engaged in handling the logs from the time they are felled and bucked until they are in the water.

It will not apply to buckers and fallers, nor men engaged in railroad construction or rollway construction, nor railroad maintenance.

The shop men will be put in the same class as train men.

The shop men entitled to premium will be as follows: Machinist and helpers, blacksmith and helpers, car knocker and repairer, oil and tool house man, and pump men.

(10) The standard output will be changed for each rollway, as the ground conditions and the stand of timber will not permit us to make a standard that could remain for any length of time the same, and be fair.

The Plan.

At the first of the month this standard for each rollway and the number of the yarder that is to work them will be posted in a prominent place in the camp, where everyone will see what they have to beat before they will be entitled to a premium.

The standard will be arrived at in the following manner: The camp foreman will advise the hook-tenders what rollways they are expected to log, considerably in advance of the time they are expected to begin work on them; and also show them definitely the boundaries of the logging areas that come to each rollway, and the manner in which they are planned to be logged.

It will be the duty of the hooktender as the representative of the crew to look over his shows ahead so that he can pass good judgment as to the amount of output a day he can get; and we expect and feel certain that all of our hooktenders will play fair both with themselves, their crews and us.

After the hooktenders, the camp foreman and the superintendent have all advised themselves as to what they think should be the standard for the rollway in question, they will meet and each put down on a slip of paper what he thinks should be the standard for the rollway in question, and the average of these three estimates will be standard, and for every thousand feet that each yarder gets beyond this point, figured at the end of the month, each man will receive premiums.

He showed by various illustrations the working of the plan and in conclusion said that there are merit systems of various kinds all having very good points and on which volumes might be written, but summed up the results that may be attained with the proper kind when properly applied as follows:

(1) Increased labor efficiency.
(2) A satisfied crew, whose heart is with you.
(3) Elimination of I. W. W. and labor union troubles.
(4) Better paid labor.
(5) A better class of employees.
(6) Much increased output.
(7) Last but not least, the point we are all after—decreased logging cost.

Following this address the Chair introduced E. S. Grammer, Seattle, Wash., to discuss the same topic. Mr. Grammer is one of the big loggers of the Coast and although he had not prepared an address he told, in a very interesting way, the experience of his company—the Browns Bay Logging Company—with the bonus system. He said the subject was such a large one that if he had started to prepare a paper on it he never would have been able to finish it, and he hated to start anything he could not finish. He said there are many ways of profit sharing, but many of them are not applicable to the logging business. For instance the United States Steel Company had been referred to as issuing stock to its employees. That is a good plan for that concern, which can maintain a price for its products and guarantee dividends. This is not possible in the lumber business. In regard to the logging or lumber business, he said he would rather discuss the bonus system. For twenty-six years, he declared, he had tried to learn something about the logging business and he believed the thing that counts most is good team work among the crews. He believed in a simple system of rewards for good results. Any bonus system must vary in different camps, as conditions are so different and therefore have to take a different base according to the chance. For example, in his company's camps a month is considered a unit for a crew and the base in one is fixed at 800,000 feet. In another camp where conditions are not so favorable the base is fixed at 600,000 feet. For loading an additional thousand feet the employees are paid the bonus amounting to a percentage of their salaries according to the amount of each. The record of the month before is not taken into consideration at all. He has had this plan in use since February 1, and finds that it creates good team work and keeps all of the men interested.

Last year H. C. Clair had appointed a committee to investigate plans for securing better efficiency from the men. This bonus system was one of the results of that system, Mr. Grammer said. As is always the case in such instances the loggers did not take kindly to the method at first and some of them quit, but time has shown them the advantages in the sysem and they are now more than satisfied with it. He said he believed any bonus system that would increase team work among the crew was a step in the right direction. He said he had received many inquiries regarding the use of this system and one letter objecting to the plan and insisting that it was establishing a bad precedent and would tend to increase accidents in the camps. Mr. Grammer could not agree with the writer of this letter and said he believed the system had come to stay.

Mr. Donovan called Mr. Young to the platform again, apologizing for the jocular way in which he had introduced him before when he spoke of his as the "Hon. J. D. Young, better known as Jim." Mr. Young said he accepted the apology and since the chairman had done such a poor job of introducing him on both occasions he would introduce himself. He said he started in the business, living in a bunk house and he had always had the interest of the men at heart. Living with them as long as he had he knew how they thought, how they arrived at their thoughts and how they expressed their thoughts. As there were ladies present he would not demonstrate the latter. He said that when he was one of them the boys knew what it cost to log, they knew what the stumpage cost, what it cost to tow the rafts etc., and they thought they knew what the operator got for his logs. This was where they were mistaken. When they asked for a raise the camp was closed down because it had been losing money. He thought that one of the causes of trouble between employer and employee was that the employer does not keep in close enough touch with his men and let them know what he is getting for his product. Mr. Young then read the following paper on "Improve the Man as Well as the Machine."

Mr. Young pointed out that during the progress of evolution in the lumber industry, those engaged in it have seen the old ox team and skid road relegated to the scrap heap. The old-time bull-puncher has sung his "swan song." The horse team is used only occasionally now in logging. The spool donkey and spool tender are only matters of history. Today the first thing that greets one's ears on a visit to camp is the scream of the locomotive whistle, the rumble of

J. P. VANORSDEL, PORTLAND, ORE.;
Who Spoke on "Profit Sharing."

the logging train, or the intermittent blasts from the whistle of the donkey engine. Continuing, he said:

Nor has the evolution confined itself to the introducing of new machines. We have been constantly spending thousands of dollars to improve the designs, power and speed of these machines. We are now using larger donkeys, heavier locomotives, cars of greater capacity; are using heavier rail, building better roads and are changing our methods in nearly every particular. We now yard the logs up hill instead of down hill, as formerly. We formerly loaded our logs on the cars with jack screw and peavy; later we found a better way—pac-buckled them up with a line from the gypsy head on the engine, running through a block alongside the cars opposite the rollway. Now we use a specially designed engine, high ginpoles, crotch lines and blocks galore, also the overhead trolley line.

The unloading of the logs has undergone a similar change. Now we have the high ginpole, the projecting boom, the tilting dump, the merry-go-round or the traveling crane that travels alongside the loaded cars and unloads them at the rate of about one car per minute, and—like the farmer who formerly rode to town in the old farm wagon, and later afforded the luxury of a carriage, and now sports an automobile and is dreaming of a flying machine—the logger is trying to get off the ground with his logging operations. He is in some instances transporting his logs on the overhead trolley, he is yarding them with the skidder and skyline, and while these systems are in a measure in the experimental or development stage, I believe they are sure to become popular, particularly on very rough steep ground. And I have no doubt that electricity will do a large part in the transportation of logs from the woods to the mill in the future.

Now, while we have been bending all our energies toward securing new and better equipment, have spent money with a lavish hand for the latest and best machinery of all kinds, it is only very recently that we have given much thought to the educating and training of men especially for the business of logging. But one year ago, at our annual meeting, the sentiment of getting better men for the logging business found expression in a resolution from which I quote the following:

"This congress pledges its hearty support and best efforts to the creation of the profession of logging engineering as a distinct branch of mechanical science, and its coöperation in the endeavor of the different universities to create a department of logging engineering.

"We believe that the timbered States and Provinces of the West should make liberal appropriations for the adequate equipment and proper maintenance of logging engineering courses and for the securing of the highest type of educators for furthering the work."

Committees were appointed to the end that courses in logging engineering in some one of the educational institutions in California, Oregon, Washington, Idaho, Montana and British Columbia, be established. In my own State—Oregon—the board of regents have adopted such a course in the Oregon Agricultural College at Corvallis. And while we are handicapped for want of a suitable building and proper equipment for the course as outlined, the legislature having refused to make special appropriation for this purpose at its last session, liberal provision for the permanent maintenance of the university has been made on a milage basis and the college at Corvallis should have ample funds for this work in the near future.

The speaker declared that the workmen's compensation law is a step forward in the matter of improving the personnel of the men who work in the logging camp and sawmill. He said it permitted better relations between the employer and employee, and pointed out that formerly, when an employee was injured in the camp or mill, perhaps through his own carelessness or the fault of a fellow employee, the negligence of the employer or through the inherent risk of the occupation, there immediately arose a feeling of resentment on the part of the other employees, who felt that this poor fellow was hurt while doing his duty and that in some manner the employer should compensate him for his injuries and loss of time, and if the employer failed to pay liberal damage, enmity and animosity grew up between employee and employer.

With the compensation law, he said, the injured employee seeks the aid of his employer to help him get his claim in proper form that he may receive the compensation to which he is entitled and at a time when he needs it most, without expense or unnecessary trouble on his part. The speaker gave as his motto, "Keep in close touch with your men and outside of working hours meet them on the level."

A. E. Cook, of Vancouver, B. C., was introduced as the inventor of an ingenious device for measuring the diameters of trees at any height. Mr. Donovan said that in his own recent experience when his company had wanted to buy an especially good claim they had had it cruised three times respectively at 12,000,000, 15,000,000 and 20,000,000 feet and each time it was cruised by a reliable cruiser. Where these cruisers differed was in the diameter of the trees at certain heights. Mr. Cook explained that his instrument gave the exact diameter of a tree at 30, 60 and 120 feet heights. The instrument is for use in making a very careful and accurate cruise or for determining the average taper of trees in a certain locality.

Monorail System Explained.

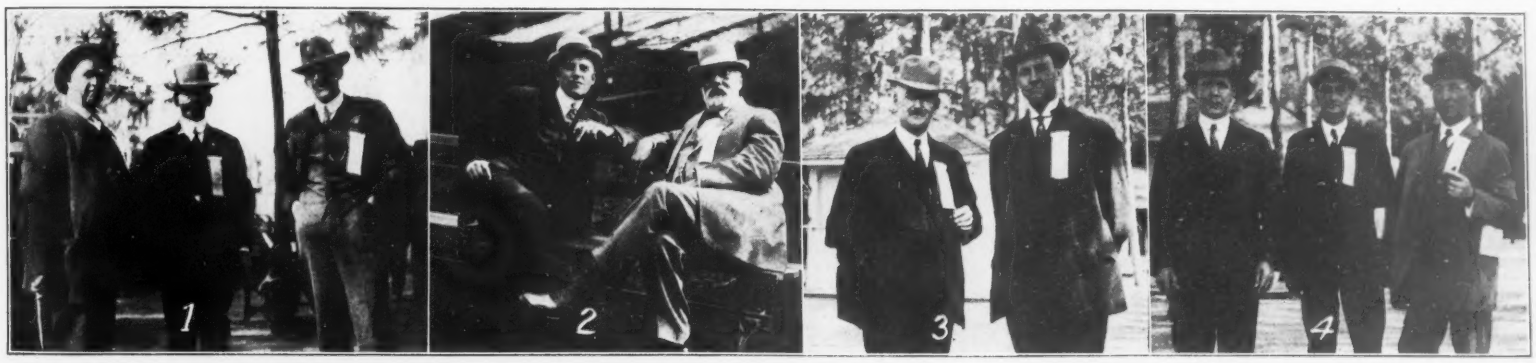
The Chair also allowed five minutes to Messrs. J. E. Riley and George T. Lewis, the promoter and inventor, respectively, of a monorail system which they were of the opinion will be practical in logging operations, especially over rough ground. The principal point in this system was that the equipment is balanced on the rail by means of compressed air.

Mr. Donovan announced that thirty-nine new members had been added to the roll since morning and then called a fifteen-minute recess.

Recognizing the fact that in the final analysis stumpage is worth what it will bring on the open market, F. A. Silcox, of Missoula, Mont., in his address on the "Appraisal of National Forest Timber," said that Congress in the enabling Act of June 4, 1897, authorized the Secretary of the Interior and later the Secretary of Agriculture to sell timber provided that in all sales of $100 and over the timber should be advertised and sold under competitive bids. This action, he said, safeguards the interests of the Government, opens the timber to anyone who wishes to compete in its purchase and protects the administration officers from charges of favoritism. He read an excerpt in point from the act and said the reason for permitting small bodies of timber valued at less than $100 to be sold without advertisement is to eliminate delay and make such small sales responsive to the needs of ranchers, settlers, miners and the like. He pointed out that theoretically it would seem, under the method outlined in the act, all that it should be necessary to do in administrative practice is to locate the body of timber; approximate the amount; determine roughly its quality and then by comparison with the bodies of timber of approximately similar accessibility and quality which have been sold on private holdings, to fix a minimum price in the advertisement of the timber and let competition finally determine the real market value. Such a plan, however, does not work out for two reasons; first, competition is not to be secured in the majority of cases, and second, the sale price of private stumpage can not be taken as a criterion of the value of national forest stumpage.

The fundamental reason why the sales price of private stumpage can not be used as the basis of value of Government stumpage is that the conditions of sale are essentially different; all timber is sold on actual value and not by estimate and the purchase and ownership of private stumpage necessitates an appreciable investment together with usually heavy annual carrying charges in the way of taxes and interest. The owner assumes the risk of losses from fire. He pointed out that usually such sales are made by estimate and not by actual scale and said that obviously taking the sale price of private timber for comparison, even were it practically possible to secure accurate and reliable information relative to the conditions of sale, is not comparing in any way analogous cases.

He assumed that having to discount the possibilities of competition and being unable to use the sale value of private stumpage as a safe criterion of values, some simple, satisfactory method must be worked out to insure some degree of uniformity among different purchasers. He cited an excerpt from the Administrative Timber Sales Manual of the Forest Service which covers such a policy briefly and sums up the general principles unlying the methods of determining the stumpage price. To apply these principles in actual practice, he declared, requires reliable basic data on the factors governing the timber in place; its trans-



(1) Former Minnesota loggers: Al H. Powers, of Marshfield, Ore.; J. P. Keyes, of Bend, Ore., and B. R. Lewis, of Seattle, Wash. (2) W. D. Starbird, of Spokane, Wash., and Manager Tottman, of Hamilton, Mont. (3) Former Menominee, Mich., lumbermen: A. W. Clark, of Portland, Ore., and W. E. Wells, of Somers, Mont. (4) John P. Weyerhaeuser, of St. Paul, Minn.: H. C. Clair, of Portland, Ore., and Peter Connacher, of Yacolt, Wash.

PROMINENT AMONG THOSE IN ATTENDANCE AT THE FIFTH ANNUAL PACIFIC LOGGING CONGRESS AT SPOKANE, WASH., SEPTEMBER 24-27, 1913.

portation to the mill and its manufacture and marketing. Such data, he said, must cover topography and surface of the ground; stand per acre; percentage of different species and quality of the timber; amount of underbrush; length of logging season; silvicultural conditions of the stand to determine the best method of marking to insure future growth; drivability of streams; advisability of railroading; method of milling; percentage of overrun; percentage of grades and different species, cull, etc. He said that this data is so fundamental that a brief description of how it is secured would be of interest and proceeded to outline its use.

Following this address, which Mr. Silcox was forced to cut short because of lack of time, the Chair called for the reports of committees.

The committee on place of next meeting reported that it had received two invitations—one for Aberdeen and one for Bellingham. The committee recommended that the congress be held in Bellingham next year and indorsed Aberdeen as the place of meeting in 1916. The committee was of the opinion that San Francisco would be the choice of the congress for a meeting place in 1915.

The report was adopted unanimously. Mr. Donovan thanked the congress on the part of the people of Bellingham.

Election of Officers.

The committee on nominations recommended that the following officers be elected for the ensuing year:

President—J. J. Donovan, Bellingham, Wash.
Vice president—A. W. Laird, Potlatch, Idaho.
Secretary-treasurer—G. M. Cornwall, Portland, Ore.

The committee recommended the following for members of the executive committee:

British Columbia—Peter Lund.
California—W. W. Peed.
Idaho—H. M. Strathern.
Montana—George Weisel.
Oregon—A. G. Powers.
Washington—E. G. English.

Mr. Donovan said the report was very satisfactory with one exception, and that was the nomination for presidency. He said it was indeed an honor to be selected, but he thought there were others better fitted. He said that Messrs. Blake and Clair had been the fathers of the congress and he believed that if Mr. Blake had been present he would have been again chosen president, and he would ask the committee to meet again and reconsider. Al Powers also objected to being placed on the executive committee.

At this point B. R. Lewis moved that the report of the nominating committee be approved. The Chair was not inclined to put this motion, but J. D. Young explained that he had been on the nominating committee last year and had promised President Blake that if he would accept the presidency at that time he would be relieved this year. He said to Mr. Donovan:

"Your nomination is a very popular one and I am sure you are the only one to object to it. It would be useless to call the committee together again because they are unanimous in their wish that you should serve."

Mr. Donovan then withdrew his objection upon the agreement of Al Powers to remain on the executive committee, and the secretary put the motion that the report be accepted and the officers declared elected. This motion carried without a dissenting vote.

Following is the report of the resolutions committee, which was unanimously adopted:

Indorsing Conservation Congress.

WHEREAS, The work of the National Conservation Congress looking to the conservation of our national resources is of great importance to the American people and in line with the general progress of the times; and

WHEREAS, Lumbermen will have especial interest in the fifth National Conservation Congress to be held in Washington, D. C., November 18, 19 and 20, because of the fact that forestry and lumbering will be prominent features of the program; be it

Resolved, That the Pacific Logging Congress gives its earnest indorsement to the work of the Congress and urges the attendance of as many members as possible at the Washington meeting.

Workmen's Compensation Legislation.

The Pacific Logging Congress heartily indorses the movement looking to securing in the various States some form of workmen's compensation legislation that will be satisfactory to employer and employee alike. The State of Washington has blazed the trail by enacting a compensation law that has brought results. This congress believes that the States of Oregon, Idaho, Montana and Province of British Columbia must soon follow the example of their sister State in securing legislation that will place their industries on a more stable basis by insuring to the injured workmen a fixed and definite sum, eliminating the demoralizing factor of personal damage suits against the employer.

This congress believes that the growing of timber is a national and State function and each State should make a careful examination of its cutover lands unfit for agricultural purposes, and better adapted for reforestation, with a view of purchase through condemnation or otherwise, and proceed to the creation of State and national forests.

The Pacific Logging Congress believes in the expenditure by the various States and Provinces of liberal and adequate appropriation for forest fire protection. To this end we indorse the efforts being made for the creation of field military posts, near the national forests, with a view of utilizing the national troops where emergencies arise in the protection of the national forests from fire.

The Pacific Logging Congress desires to extend its thanks to the lumbermen of the Inland Empire for the entertainment provided; and especially the members of the local committee on entertainment, whose hospitality has added to the pleasure of the session.

A special vote of thanks is tendered the Potlatch Lumber Company, of Potlatch, Idaho, for the delightful outing and entertainment being provided at its camp and mills; also to the Washington Water Power Company for furnishing a place of meeting and for many other courtesies extended.

Our appreciation is also due the various railroads for their securing for the congress special rates to Spokane; and to the lumber press and daily newspapers of Spokane for the effective publicity they have given the congress.

In view of the fact that the forest resources of the Northwest are second in importance only to agriculture; therefore, be it

Resolved, That the Pacific Logging Congress pledge itself as in favor of using every reasonable and proper means of securing adequate appropriation from the various States for providing means so that the young man who wishes to follow the business of logging may have the same advantages to receive the necessary training as is now afforded the boy who is to follow agricultural pursuits.

This congress regrets that due to unavoidable cause our president, Mr. Blake, was not able to be with us and preside over this congress. We wish to express our thanks to Mr. Donovan who has so ably presided over this meeting.

A special vote of thanks is extended to our able secretary, George M. Cornwall, for his unflagging interest and tireless efforts toward making this meeting the success it has proven.

(Signed) W. W. PEED, Chairman.
JOHN P. VAN ORSDEL.
JAMES O'HEARNE.
H. W. SESSOMS.
W. E. WELLS.

J. S. O'Gorman, reporting for the committee on auditing and finance, reported no discrepancies in the treasurer's report. He said that from this report it was evident that, like the cost of living, the cost of logging congresses is going up. He said he believed they were worth the money, but they ought to be put on a better financial basis. For this reason he made a motion that the 1914 logging congress be made self-sustaining in that it be financed by memberships only, and that in order to accomplish this the annual dues be increased to $10. This motion was passed with the understanding that the large firms could take as many memberships as they wanted to.

The Chair then announced the appointment of two special committees. The first on the standardization of loggers' tools was composed of the following:

W. W. Peed, Eureka, Cal.; J. D. Young, Kelso, Wash.; J. P. Van Orsdel, Portland, Ore.; T. Jerome, Seattle, Wash.; George Weisel, Missoula, Mont.; C. A. Stewart, Portland; A. G. Labbe, Portland.

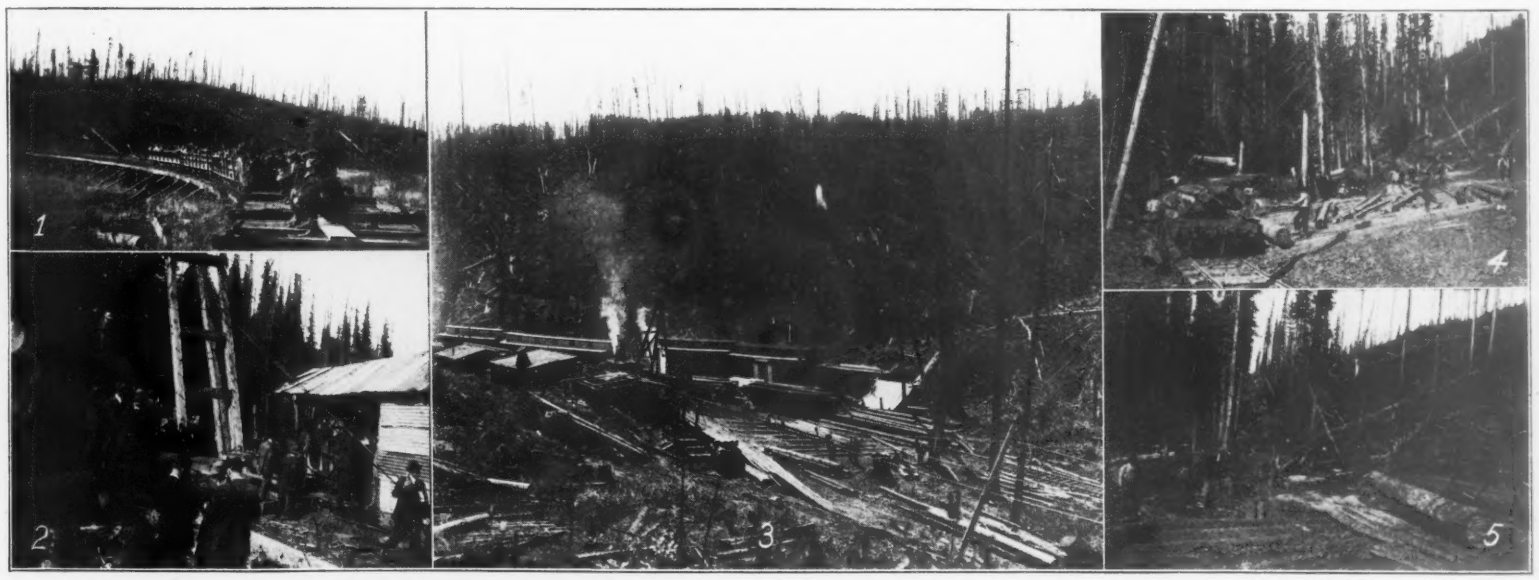
The second special committee on logging engines was composed of the following:

A. G. Labbe, Portland, Ore.; Eugene Roberts, Tacoma, Wash.; C. G. Frink, Seattle, Wash., and Harry Turney.

A motion prevailed that a general committee to be composed of three loggers and two deans of forestry schools, with the new president as a member of the committee, be appointed to formulate plans for a course in logging engineering for western colleges.

The president was granted the authority to appoint a special committee for British Columbia to handle this subject if it was thought advisable.

Last year committees were appointed for each State and the Province of British Columbia to work in the interests of courses of logging engineering becoming regular and important parts of the curriculum of the universities. Reports from these different districts showed that good progress was being made along these lines. The University of Washington has a logging engineering course in connection with its school of forestry. The Oregon Agriculture College has established a course of logging engineering, but so far the legislature has re-



(1) On the Way to the Potlatch Camp. (2) Loading Logs on Cars at the End of a Cable Tram. (3) Camp at Cable Tram Logging Operations Where Lunch Was Served in Camp Dining Car. (4) Cable Tram Logging Near Bovill. (5) Unfastening the Logs From the Sling at the Cable Tram.

INTERESTING INCIDENTS WHICH MARKED THE VISIT OF THE PACIFIC LOGGING CONGRESS TO THE LAND OF POTLATCH, SEPTEMBER 27, 1913.

National Forest Timber For Sale.

Idaho White Pine

The Forest Service is now cruising and will later offer for sale 500,000,000 feet of timber, running nearly 40 per cent white pine, in the southwest corner of Clearwater County, Idaho, within the Clearwater National Forest. The area is about 35 miles east of Orofino, and embraces approximately 80,000 acres.

The tract could be reached by a 30 mile railroad connecting with the Clearwater Short Line, a branch of the Northern Pacific, which follows the main Clearwater River. As an alternative, Lolo Creek, the main stream of the area, could also possibly be driven or flumed.

A detailed report on the area will probably be available in October at which time the stumpage rates and conditions of sale will be made known.

The country can easily be examined during the winter by snowshoeing. It will be necessary to cache supplies by late October or early November for a winter examination.

The District Forester at Missoula, Montana, will discuss any questions of policy or procedure with interested parties and, with the Forest Supervisor at Orofino, Idaho, lend assistance in arranging for an examination.

A "Gilt Edge" Opportunity

Party of recognized responsibility, with faith in the future possibilities of West Coast timber, can open purchasing negotiations direct with the owner of several tracts of the best selling woods on the West Coast. The size of the tracts make them particularly desirable to party of large means, and location will stand rigid investigation.

Owner controls property absolutely and will correspond only with parties who can furnish references showing they command necessary capital to purchase if property is as represented.

Address "Owner" care American Lumberman.

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C. M. STEINMETZ P. O. Box 83 **Washington, D. C.**

"THE LUMBERMAN'S ACTUARY"

Shows the cost of any number of feet of lumber between 2 and 29,000 feet at any price from $6 to $75 a thousand; also of lath and shingles from 85c to $6 a thousand. In leather $4, cloth $3.50, postpaid.

AMERICAN LUMBERMAN, Chicago.

fused to appropriate funds for building a special building for this course. The California legislature recently made an appropriation of $42,000 for the establishment of a course of forestry and logging engineering at the agricultural college. Idaho recently appropriated $15,000 for this purpose and Montana is also making progress.

The secretary announced that the Western Forestry & Conservation Association would hold its next meeting in Vancouver and all were urgently invited to attend and were promised a royal entertainment by the famous entertainer, John O'Brien, of the Brooks-Scanlon-O'Brien Company. It was also announced that the eight sleepers composing the special train for the trip to Potlatch were all filled and that there were about thirty more who would be unable to attend unless friends who had berths would be willing to double up with them.

The session adjourned at 5:30 and the loggers went to the city, where an hour later the crowning feature of the entertainment, the banquet in the Hall of the Doges, was to be served.

THE BANQUET.

The crowning feature, displaying the hospitality of the city of Spokane and the Inland Empire lumbermen, was the dinner given in honor of the loggers in the beautiful Hall of the Doges at Davenport's Cafe, on Friday evening. The reputation of this famous grille is well known all over the Pacific coast and among travelers the country over. It is unnecessary as well as impossible to describe the culinary triumphs of the chef, further than to say it was of Davenport's best.

The Hall of the Doges has a somewhat different appearance from the ordinary camp cook house, but the loggers seemed to enjoy themselves none the less for that reason. Two beautifully-gowned ladies sang for their entertainment and with sparkling prisms hanging from the elaborate chandeliers and sparkling wine in their glasses, they were surely a well satisfied and happy "crew."

The famous Eloise Francois Cartier VanDissel, although it is said he is not a Scotchman, managed to relegate H. M. Strathern to background for awhile and himself again occupy the position of toastmaster, a place that, before the days of Strathern, would have been conceded to be his without fighting for it. To show his magnanimity and his appreciation of the sentiments of the newly-elected president, the first thing the toastmaster did was to request that the great Irish comedian "Tommy" Shields from Seattle sing: "Who T'rew de Overalls in Mrs. Murphy's Chowder." Much to the disappointment of everybody "Tommy" refused, but he soon had them all in a roar of laughter by springing a couple of new (question-mark) ones. He proved himself just as popular as ever.

It looked as though the Scotch, the Irish, and the Dutch had had their innings and therefore the politic toastmaster next called a German to the bat. He went through the unnecessary formula of introducing A. L. Remlinger, the largest Roebling representative present. He tied Shield's score, but lack of space prevents a reproduction of a verbatim report of his remarks.

The toastmaster said he thought everyone present had heard enough addresses to last him for a week and therefore there would not be any addresses during the evening. A few well-known after-dinner speakers would be given a chance to say something, however. He then called on the newly-elected president who, he said, had presided so beautifully during the entire congress.

Mr. Donovan believed the Spokane congress had been the most successful ever held. He said:

I think there have only been two mistakes made. One was making me president and the other having too many addresses and forcing me to curtail the program and thus cut out the time of our friend from Montana (George Weisel). I promise you that next year the program will have fewer papers and more time will be given in which to discuss them. I thank you all for the coöperation given in making everything a success.

He looked forward with pleasure to the holding of next year's congress in Bellingham, his home, and promised the best the city had, although he said he could hardly hope to entertain the congress in such a royal manner as Spokane had done.

Mr. VanDissel then introduced John O'Brien, whom he spoke of as the prince of entertainers.

Mr. O'Brien said he was told during the evening that he would be expected to give a ten-minute talk, but he wouldn't need that much time. He said he was much pleased at the treatment that had been received from the Inland Empire lumbermen. He had assured his British Columbia friends in advance that they would be royally entertained in Spokane, but the entertainment committee had surpassed his fondest expectations. He said he wanted to see every one present at the next meeting of the Western Forestry & Conservation Association, which will be held in Vancouver, B. C.

The toastmaster then said:

Gentlemen I want to introduce to you our host of tomorrow, A. W. Laird, general manager of the Potlatch Lumber Company.

Mr. Laird said he wanted to reiterate again his inviation to everyone to take the trip to Potlatch and Elk River the following day. He said:

It will be a keen pleasure for me and I know would have been greatly enjoyed by my late friend and predecessor, William Deary, the result of whose handiwork you will see tomorrow. You are invited to go to Potlatch. When I first asked the meaning of the Indian word "Potlatch" I was told that it meant a gathering of the tribe and the giving of presents. Some of the stockholders of the Potlatch Lumber Company thought it meant the giving of dividends, but have since come to the belief that it means the sending out of assessments.

He closed his remarks by saying he hoped everyone would be able to enjoy the trip.

A characteristic telegram from Dr. C. A. Schenck with best wishes for the banqueters was read and then the toastmaster called on H. M. Strathern to explain why, as a member of the entertainment committee and on all other occasions for that matter, he always managed to exclude everyone else when it came to a matter concerning the ladies.

Mr. Strathern sidestepped the issue, probably considering that the request only displayed jealousy on the part of the toastmaster. Among other appropriate thoughts Mr. Strathern expressed the hope that the succeeding meetings of the Pacific Logging Congress would continues to grow bigger and better each year.

The talks were interspersed with musical selections, and Mrs. Merriam, a local musician of much talent, was recalled by special request, proving to be a strong favorite.

A telegram was sent by the happy banqueters to their former president, E. P. Blake, Seattle, which read:

The fifth annual Pacific Logging Congress sends greetings and thanks for your good work causing four years of progress to be made by this congress and making this meeting possible.

T. Jerome, not of New York but of Seattle, did not know anything about Harry Thaw, but he told a good story on Harry Clair, vice president of the congress and, as that worthy declared, the main "goat" of the proceedings.

Mark Colby, of Portland, told a good story and H. C. Clair, of the same town, was given an opportunity to defend himself, which he embraced with alacrity.

Perhaps you have heard of an Irishman having a flannel mouth (whatever that is), but as a rule the term silver tongue seems better fitted to members of that race. Toastmaster VanDissel has a way of saving the best things for the last and with a smile of anticipated pleasure he introduced "his cousin, Mr. O'Toole."

John R. Toole, of the lumber department of the Anaconda Copper Mining Company, Missoula, Mont., is no stranger in the Hall of Doges, nor is he a stranger to lumbermen of the West and he realized that he had a reputation to sustain as well as the honor of his race to uphold. Those present agree that he did both. He said that each succeeding time he came to the Hall of the Doges he enjoyed himself more than ever before. Mr. Toole explained how it was that he claimed relationship to the toastmaster, saying that he had discovered that the "O" in O'Toole had the same meaning as the "Van" in VanDissel. J. P. McGoldrick, the wellknown head of the McGoldrick Lumber Company, Spokane, expressed doubt of the relationship, because he said that VanDissel neither thought, talked nor acted like an Irishman. Mr. Toole proved the relationship by asking Mr. VanDissel a question in Irish (?), to which VanDissell replied "Ya," thus proving that he entirely understood it although nobody else present did.

The toastmaster explained that he never enjoyed anything more than to be called cousin by Mr. O'Toole and then asked everyone to drink to the toast: Good Night. Thus ended Spokane's part in the entertainment of the loggers in time for them to take the "Loggers' Special" train for Elk River and Potlatch as guests of the Potlatch Lumber Company. No more enthusiastic crowd ever dispersed from a more enjoyable feast, and the banquet will be one of the features of the 1913 Pacific Logging Congress that will remain long in the minds of all who were present.

THE JOURNEY TO THE LAND OF THE POTLATCH.

Two hundred and thirty-seven people—mostly loggers, members of the Pacific Logging Congress—stowed away in eight Pullman palace sleeping cars, traveled nearly 300 miles in twenty-two hours, slept some, but "rubbered" more at electrically-operated sawmills and donkey engines and cable tram systems of hauling logs, and millions of feet of lumber, were royally entertained and dined and returned to the starting place vowing that there never had been such a trip and doubted if there ever would be again. Fifty more loggers wanted to go on the trip, but the Northern Pacific Railroad positively could not scare up another sleeping car at Spokane, having increased the allotment from four to eight and then by force of circumstances had to quit.

At 10:20 Friday night this special train of Pullman sleeping cars pulled out of the Northern Pacific depot at Spokane for the journey down through the wheat fields of the Palouse country, the granary of the Inland Empire, and over across the Idaho line to Potlatch, on the Washington, Idaho & Montana Railroad, owned by the same interests as the Potlatch Lumber Company, and then on to Bovill, the junction with the St. Maries-Elk River branch of the Milwaukee Railroad, and then over that line twenty miles to Elk River, which was reached shortly after 6 o'clock Saturday morning, but in time for a bountiful breakfast at the company's hotel. From this on the visiting loggers were the guests of the Potlach Lumber Company, represented by its general manager, A. W. Laird, and the heads of various departments. The plant at Elk River, completed two years ago, represents the last word in sawmill construction. Equipped with three Diamond Iron Works band mills, the entire plant run by electricity, days only now, is turning out 150,000 feet of lumber, under supervision of Andrew Bloom, superintendent of manufacturing. A. Muckle is the yard superintendent and Charles Munson is in charge of logging. The Elk River plant, including sawmill and planing mill, is operated by electricity with two Westinghouse-Parsons type generators of 1,300 kilowatts capacity, which also furnish lights for the town and operate two camps where the logging is done by electricity.

After inspection of this modern sawmill, planing mill, power plant, and storage pond with a capacity of 20,000,000 feet of logs, the Pullman special pulled out for the return trip, and a few miles out a stop was made to view the electric logging, where a modified

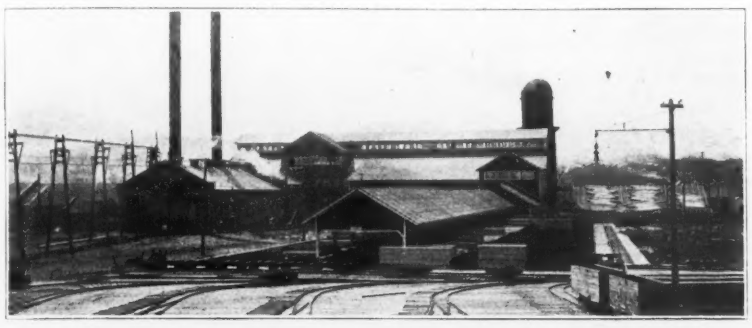
type of the MacFarlane sky-line is operated by electric power brought out from the plant at Elk River. In transmission, the voltage is stepped up from 550 to 11,000 and at the donkey engine is stepped down again to the original 550 volts and is conveyed to a 150-horsepower General Electric logging type motor, equipped with a magnetic break. Power is controlled by a controller as on a street car. There is a circuit breaker on it that prevents burning out. The electric engineering in connection with the Elk River plant and logging was done by E. J. Barry, now electrical engineer for the St. Paul & Tacoma Lumber Company, who accompanied today's excursion.

Camp Lunch and Cable Tram.

Leaving the electric logging and pulling up over a steep grade, attaining at the highest an altitude of 2,900 feet, Bovill was reached before 11 o'clock and the visiting loggers were transfered to a train of logging flat cars, on which had been improvised comfortable seats, and the start made for the camp, five miles out, where T. P. Jones, logging superintendent for the Potlatch plant of the Potlatch Lumber Company, has installed a cable tram system that is proving most satisfactory. This, as well as the electric logging and the big modern mills, was a point of interest of the trip.

At Bovill is located the big cedar pole yard of the E. T. Chapin Company, that handles the cedar products on the Potlatch Lumber Company's lands. Mr. Chapin was one of the party, but as logging was the principal occupation of the visitors, but a brief stop was made, and the cable tram camp was reached, under the guidance of Mr. Jones, in time for an early lunch.

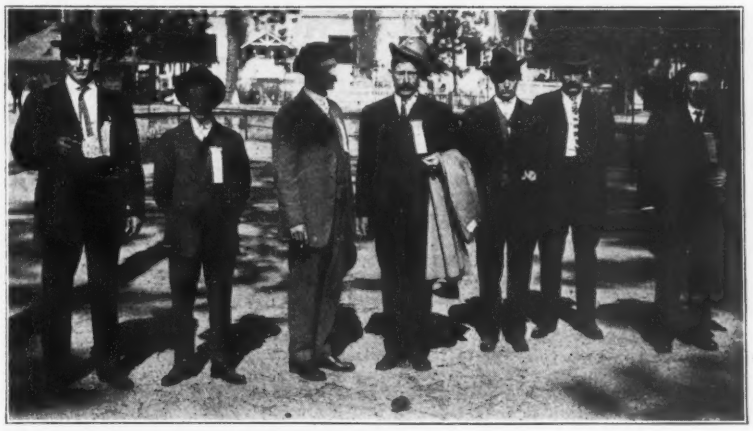
The system of handling logs from the skidway one-and-one-half miles out, where they are yarded by team to the railroad cars, being transported by the cable tram in packages of three or four logs suspended in slings from the tram, is fully described by Mr. Jones in his paper presented at the first day's session of the logging congress.



THE POTLATCH LUMBER COMPANY'S PLANT AT ELK RIVER, IDAHO.

Arrival at Potlatch.

Mr. Jones' cable tram camp was left at 2 o'clock, and after transferring at Bovill to the Pullmans, Potlatch was reached at 4 o'clock, where a one-hour stay was made. Here the visitors were met by Paul Lachmund, sales manager, and his father and mother, Mr. and Mrs. Otto Lachmund, and many other townspeople and lumber company department heads. Otto Lachmund, by the way, found many friends in the party, as did his estimable wife, as he was for many years with C. Lamb & Sons, Clinton, Iowa, and afterwards manager of the Arrow Lakes Lumber Company, Arrowhead, B. C., also a Lamb interest.



POTLATCH LUMBER COMPANY'S LOGGING REPRESENTATIVES AT CONGRESS.

The Potlatch plant, with its equipment of four Diamond Iron Works bands and a gang, operating days only, is sawing 300,000 feet of lumber from an ordinary run of logs. M. L. Seymour is superintendent of manufacturing operations at Potlatch, assisted by W. H. Wilson, planing mill superintendent, and Charles Peterson, yard superintendent. The operations of the plant were watched with a great deal of interest during the brief stop. There was 76,000,000 feet of lumber in pile at Potlatch and 37,000,000 feet in pile at the Elk River plant. Owing to the excessive snow, the latter is not operated during several of the midwinter months, but the Potlatch sawmill runs the year round.

Leaving Potlatch, the Hoo-Hoo yell was given, and three cheers for A. W. Laird, and the Potlatch Lumber Company, and the return to Spokane began. Coming over from Bovill to Potlatch, on the Washington, Idaho & Montana Railroad, nicknamed "the college line" because of the famous institutions of learning whose names have been used to designate the communities along the road, the trip was through a timber region, interspersed with many fine farms, showing the fertility of the land when cleared and tilled. Mr. Laird is general manager of the railroad as well as the lumbering operations, and J. D. Morrissey is superintendent of the road.

On the last leg of the trip it was a tired, but happy crowd of loggers who occupied the "Loggers' Special." Because of the many courtesies extended by Mr. Laird and his company, a fund was raised by unanimous contribution on the train, to purchase and present to Mr. Laird, at some time in the near future a loving cup suitably engraved, as a testimonial of the appreciation on the part of the journeying loggers, of his kindness. Spokane was reached shortly after 8 o'clock in the evening, in time for connection with trains to the Coast and Portland, as well as Montana points, and the fifth annual logging congress was but a pleasant memory.

CONVENTION NOTES.

Red, white and blue proved to be more popular than ever. A red ticket meant a free lunch Friday; a blue one gave you a lunch on Thursday and a white ticket entitled the holder to Friday night's sumptuous banquet.

There was one exception to the no-exhibit rule at this year's congress that being the Industrial Y. M. C. A. which had a very attractive exhibit showing what was being done at various camps where the Y. M. C. A. has been installed.

A. W. Clark was present, having just returned from Europe, and he thought he was still sight-seeing. The monkey cages were particularly attractive to him.

Dr. Schenck and E. F. C. VanDissel sat together in the front row and exhibited the latest designs in German and Dutch hirsute adornments.

Dr. Schenck and Thorpe Babcock tied for the honor of being the tallest man present not a logger.

Most of those present thought that R. W. Vinnedge, of North Bend, Wash., was going to deliver the invocation until he got started. Even then the ladies present wouldn't believe he was a logger.

With Dr. Schenck's text books, Roebling's stillettos and playing cards, Nisqually-Russel souvenir badges, Grand Rapids Veneer Works whetstones, not to mention Lidgerwood literature, it would have been better if the philanthropic doctor had provided suitcases for each of the visitors instead of only one for the entire bunch.

When it came to oratory the "O's" seemed to have it. Did anybody miss "Jim" O'Hearne's "Logging Engineer?"

Probably A. W. Cooper was the busiest man in town. As the local lumbermen were the hosts, and by local should be included the Inland Empire, naturally the secretary of the Western Pine Manufacturers' Association was one of the active members of the local entertainment committee. Hats off to Mr. Cooper; he has proved his entertaining powers. He even entertained the lady musicians while H. M. Strathern was for the moment otherwise engaged.

Read the list of those in attendance and see that Jack Pidgeon from Crows Nest was there. Now will you say there's nothing in a name?

Other good names were Prettie, Sersanour, Tindolph, Bird, Winkenwerder.

The German colony was represented by Donovan, O'Day, O'Connell, O'Hearne, O'Gorman, O'Brien, O'Toole.

John P. Weyerhaeuser, of St. Paul, who is president of the Rutledge Lumber Company, with timber holdings tributary to Coeur d'Alene, was a very much interested attendant at the hearings. Mr. Weyerhaeuser plans to spend the winter in Spokane, and will be joined in a few days by Mrs. Weyerhaeuser. He accompanied the party on the trip to Potlatch and was pleased in that everyone enjoyed the trip so much. His brother, Charles A. Weyerhaeuser, of Little Falls, Minn., is president of the Potlatch Lumber Company.

The Lidgerwood Manufacturing Company was represented at the congress by M. H. Dickinson, of Seattle, western manager, and J. T. Thornton, Portland, Ore.; T. L. Williams, San Francisco; A. S. Williams, Vancou-

You Know Something About the Land of Last Supply

You know, of course, that the nearest source of adequate lumber supply are the forests of the west, the inter-mountain pines and the fir, spruce, cedar and hemlock of the Pacific Coast.

In a broad sense, we are at the beginning of an era of

Competitive Demand for Western Timber

Mills of the South are exhausting their supply and are seeking new locations.

Timber is disappearing from the market, but not so rapidly now as it will on a constantly increasing scale during the next decade. Every tract taken off the market decreases the supply and increases the desirability and value of those remaining.

The best go first. Investigate now.

James D. Lacey & Co.

TIMBER LAND FACTORS

Chicago, Ill., 1750 McCormick Building
Portland, Ore., 1107 Spalding Building
Seattle, Wash., 1009 White Building

FINANCIAL

WE MAKE LOANS ON TIMBER

For the past ten years we have devoted our entire attention to the making of loans to the larger lumber and timber interests of the United States. During this period we have so loaned over $65,000,000. The many years that we have specialized in this field have enabled us to develop a trained and experienced organization which has proved its ability to serve the lumber interests with a high degree of efficiency.

Our services have been of extreme value to many of the large lumber interests of the country. We invite responsible lumbermen and timber owners to confer with us, at our offices in Chicago or San Francisco, with respect to any plans which contemplate borrowing money. We shall be glad at all times to give lumbermen the benefit of our experience in this specialized branch of finance.

CLARK L. POOLE & CO.

Bank Floor Westminster Bldg. Cor. Dearborn and Monroe Sts., CHICAGO
Mills Bldg., SAN FRANCISCO.

Fort Dearborn National Bank

Chicago, Illinois

United States Depositary

Capital - - $ 2,000,000
Surplus and Profits 700,000
Deposits - - 31,000,000

WM. A. TILDEN, President
NELSON N. LAMPERT, Vice-Prest. HENRY R. KENT, Vice-Prest. J. FLETCHER FARRELL, Vice-Prest.
GEORGE H. WILSON, Cashier CHARLES FERNALD, Ass't Cashier THOMAS E. NEWCOMER, Ass't Cashier
WM. W. Le GROS, Ass't Cashier. H. LAWTON, Mgr. Foreign Dept.

Fort Dearborn Trust & Savings Bank

WILLIAM A. TILDEN, Prest. CHARLES A. TILDEN, Ass't Cashier
NELSON N. LAMPERT, V. Prest. E. C. GLENNY, Secy and Trust Officer
JOHN E. SHEA, Cashier STANLEY G. MILLER, Mgr. Bond Dept
F. A. MYREN, Mgr., Real Estate Loan Dept.
HERBERT C. ROER, Manager Safe Deposit Vaults.

Safe Deposit Vaults, Monroe and Clark Streets

WE INVITE
CORRESPONDENCE WITH

LUMBERMEN

OF THE

HIGHEST CREDIT

WHO WISH TO READJUST THEIR FINANCIAL OBLIGATIONS, TO MATURE OVER A PERIOD OF SEVERAL YEARS.

FINANCING OF THIS CHARACTER CAN BE HANDLED BY US QUICKLY AND AT SMALL COST TO THE BORROWER.

F. B. HITCHCOCK & CO. — BONDS
NEW YORK LIFE BUILDING.
CHICAGO, ILLINOIS

ver, B. C., and J. S. Wiley, of Seattle. A. L. Wright, the Spokane representative, is in the East and was unable to be back in time.

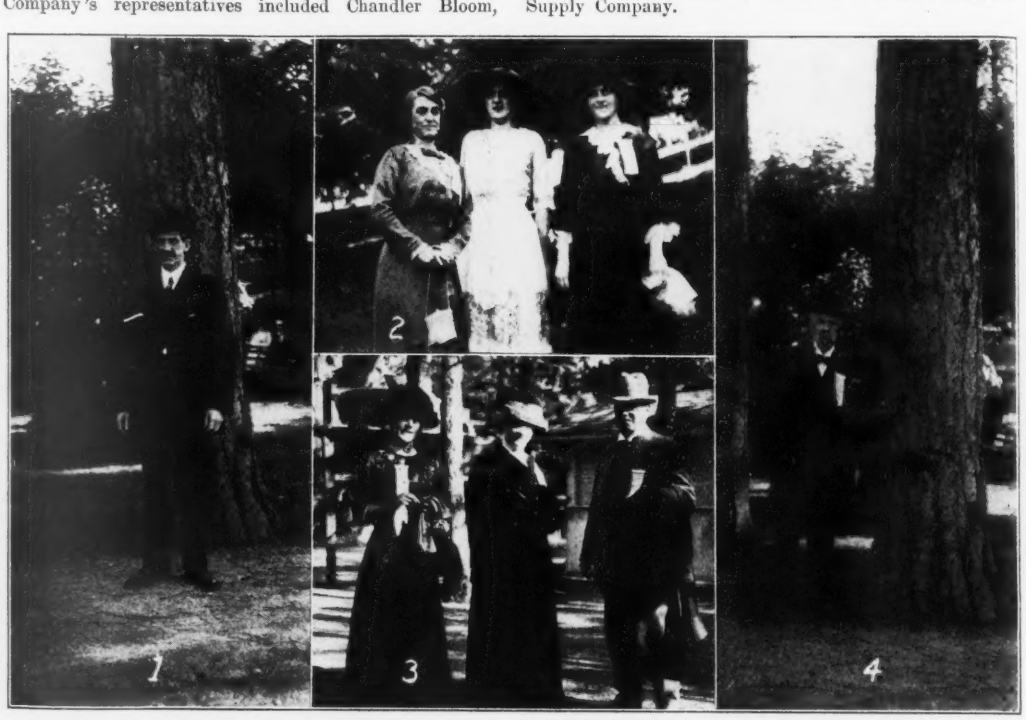
A. W. Clark, of Portland, Ore., for years engaged in logging on the lower Columbia River, attended the congress, accompanied by his son, A. B. Clark. A. W. Clark and his two sons, A. B. and W. B. Clark, have just returned from a tour of Europe.

Jim Young expressed his idea as to the welfare of the lumberjack as follows: "Make the logger an honored and respected citizen—a higher type of man."

Among the supply men the wire rope concerns were strongly represented. The United States Steel Products Company's representatives included Chandler Bloom, sales agent; Edward Bray, C. R. Hill and A. M. Oaks, Portland; L. T. Hays, tramway engineer, San Francisco; H. E. Hansen, Seattle, and F. Wilkinson, of the Wilkinson Company (Ltd.), Vancouver, B. C.

The John A. Roebling's Sons Company delegation consited of W. F. Richardson and Jack Moseley, Seattle; J. G. Thatcher and R. L. Adams, Portland; A. L. Remlinger, Aberdeen; A. N. Derby, Spokane.

Other wire rope men in evidence were: John Iles, Seattle, A. Lescher & Sons Rope Company; C. W. Gregory, Tacoma, West Coast Wire Rope Company; H. J. Bailey, Seattle, Broderick & Bascom Loggers' Supply Company; and C. O. Tindall, Seattle, Broderick & Bascom Loggers' Supply Company.



INTERESTING PERSONALITIES PHOTOGRAPHED DURING THE ANNUAL PACIFIC LOGGING CONGRESS.
(1) H. C. Culver, President, Sandpoint Lumber & Pole Company, at the Congress. (2) The Spokane Ladies Who Sang: Mrs. Charles Freese, Miss J. D. Allen, Mrs. E. Langley. (3) (Left to Right) Mrs. Knapp, Portland, Mrs. J. J. Donovan, J. J. Donovan. (4) John O'Brien, Vancouver, B. C., a former American Logger of Irish Extraction.

WEST COAST MANUFACTURERS' MONTHLY MEETING.

Members Protest at Misrepresentation — Fair Investigation Asked for Wooden Cars in Wrecks — August Trade and Market Extension Discussed.

PORTLAND, ORE., Sept. 23.—The regular monthly meeting of the West Coast Lumber Manufacturers' Association was held at the Multnomah Hotel in this city today. The cargo branch of the association and the board of trustees held a meeting in the forenoon, in which regular routine business was disposed of. The general meeting was well attended considering that no business of very vital importance was to come up before the meeting.

The meeting was called to order at 1:45 by President W. B. Mackay and, contrary to the usual custom, the reading of the minutes of the preceding meeting was not dispensed with. The secretary went over the minutes, calling attention to the fact that they contained nothing regarding any movement to curtail the manufacture of lumber. A garbled Associated Press report of the former meeting, published in a number of daily papers and copied by one or two lumber papers, had stated that the manufacturers had agreed to curtail their output. The official minutes of the meeting contained no mention of this subject. The lumber papers that were represented in the meeting by correspondents had no mention of the subject in their reports and everyone who was present at the meeting knew no such action was taken or even discussed. The fact that a false report had been published was simply called to the attention of the members.

The secretary read a number of communications that had come to his office since the last regular meeting. Among them was a letter calling attention to the proposed new code in New York limiting the use of wood trim in tall buildings. He said that this code was being strongly opposed by manufacturers and New York wholesalers.

The secretary told of the progress of the committee's work on an advertising campaign to consumers telling of the merits of west coast forest products. The responses by members of the association to the call for funds practically assure the ultimate success of the movement as far as financing it is concerned.

F. H. Tharp, representing a detective agency, asked for an opportunity of addressing the meeting for a few minutes and was granted the floor. He told the members that any of them wishing to know the status of the I. W. W. movement could have a full report, including the action taken at a recent meeting of that organization in Chicago.

Chilean Duty and Advanced Freight Rates.

J. N. Teal, counsel for the association, addressed the meeting on the work of the traffic and legal departments. He spoke of the proposed prohibitive Chilean duty on lumber. He said that his department had taken the matter up with the Secretary of State and all departments of the Government that would be interested, and with the National Chamber of Commerce of the United States. He said that the different departments of the Government were showing keen interest in the subject and all was being done that is possible.

Speaking of railroad rates, Mr. Teel said that the railroads were doing all in their power to mold public opinion and impress upon shippers that the carriers must get higher rates. He said that he would not express any opinion on the subject of a general raise in freight rates, but as far as lumber rates are concerned he felt sure that lumber was already taking too high a class rate as compared with other commodities. He said that the rate was made fifteen years ago and to his knowledge lumber was the only commodity on which the rate had not been reduced in the last fifteen years.

Wooden Cars in Wrecks.

Mr. Teal then asked that a resolution that had been prepared at the morning meeting of the trustees be put before the meeting for approval. The secretary read the following resolution, which was adopted unanimously:

WHEREAS, The Interstate Commerce Commission has ordered an investigation of the recent wreck on the New York, New Haven & Hartford Railroad for the purpose of ascertaining the cause of this wreck; and

WHEREAS, There was a loss of life resulting therefrom which the public has come to believe is directly or indirectly due to the fact that the cars in which this loss of life occurred were built of wood instead of steel; and

WHEREAS, In the opinion of many experts the modern wooden car, properly constructed, makes it not only the safest but the most comfortable car;

Therefore, We, the West Coast Lumber Manufacturers' Association, respectfully request the Interstate Commerce Commission that the scope of the present investigation be broadened to ascertain the cause of all wrecks, and to what extent the equipment was responsible for fatalities and injuries since the introduction of steel cars.

H. KIRK,
W. C. MILES,
G. B. MCLEOD,
Committee.

Place of Meeting.

W. C. Miles, manager of the association, reported that as per action taken at the last meeting his office

had circularized the members for a mail vote on whether the association should adopt Centralia as a regular meeting place instead of following the plan of rotating the meeting place from one city to another. The result of the vote was 31 voting in favor of Centralia as a regular meeting place, 10 opposed and 96 not voting at all. What the association wishes to do is to secure better attendance at the monthly meetings and, as the mail vote was not at all representative, on motion by F. C. Knapp the president was authorized to appoint a committee of five to investigate the subject of a meeting place and make a full report to the association.

August Cut and Shipments.

Mr. Miles then read the following comparative statement of cut and shipments to date:

	Feet.
82 mills cut in August, 1913	214,251,509
82 mills shipped in August, 1913	189,702,213
Excess cut over shipments	24,549,296
73 identical mills cut in August, 1912	191,023,512
73 identical mills cut in August, 1913	202,421,496
August, 1913, cut exceeds August, 1912, cut	11,397,984
73 identical mills shipped in August, 1912	211,785,738
73 identical mills shipped in August, 1913	179,769,985
August, 1912, shipments exceed August, 1913, shipments	32,015,753
Cut—first eight months of 1913	1,768,426,736
Cut—first eight months of 1912	1,515,229,151
Cut for the first eight months of 1913 exceeds cut for the first eight months of 1912 by 16.71%, or	253,197,585
Shipments—first eight months of 1913	1,706,295,872
Shipments—first eight months of 1912	1,600,968,215
Shipments for first eight months of 1913 exceeded shipments for first eight months of 1912 by 6.57%, or	105,327,657
Cut—first eight months of 1913	1,768,426,736
Shipments—first eight months of 1913	1,706,295,872
Cut exceeds shipments	62,130,864
Shipments—first eight months of 1912	1,600,968,215
Cut—first eight months of 1912	1,515,229,151
Shipments exceed cut	85,739,064

Transportation Matters and Grading Rules.

F. G. Donaldson, of the traffic department, reported that the association rate book which that department has been working on for several months will be ready for distribution October 1. He told of the many strong features that it will contain and that its price will be $75 a year, which will include all changes in the tariffs during that time.

Mr. Donaldson also said that his department was looking after the association's interest regarding a recent petition from Curtis Bros. & Co., Clinton, Iowa, to the Transcontinental Freight Bureau to advance freight rates on sash and doors from Pacific Coast points to the Atlantic seaboard. This concern states that if the changes are not made the matter will be laid before the Interstate Commerce Commission.

W. C. Miles said that the grading bureau had been asked by some of the northern mills to make some changes in the rules. These mills ask that rules be made for grading red cedar shiplap, and that the old grade of No. 2 common fir be put back into the rules.

Market Extension.

Mr. Miles then read the following report on market extension:

The day is past when lumbermen can say the people have to buy their lumber; substitutes of such a practical nature manufactured and marketed by men of great commercial ability who are suggesting through the most potent kind of advertising the use of their products have placed the lumbermen in a position where they can no longer rely on unsuggested demand to consume their product in proportion to their capacity to produce. The time has come when you must suggest the use of your commodity by the use of advertising and development work. Proper advertising is only scientific suggestion.

Trend of Output and Substitutes.

I give you below some figures taken from the Government reports that are significant. The average cut of lumber in the United States for the last six years has been 38,861,000,000 feet. The cut by years is as follows:

Feet.		*Feet.*	
1907	40,256,154,000	1910	40,018,282,000
1908	22,224,369,000	1911	37,003,207,000
1909	44,509,761,000	1912	39,159,414,000

The lowest cut, 33,224,369,000 feet, was in 1908. The highest cut, 44,509,761,000 feet, was in 1909. From this point it was decreased to 37,003,207,000 feet in 1911 and 39,158,414,000 feet in 1912, or an average for the last two years of 38,080,000,000 feet, which is 781,000,000 feet below the average for the last six years. This decrease in the face of the continually increased population is a matter that deserves your closest attention. When you consider the enormous increase in the amount of improvements throughout the country it must be plainly apparent to you that the consumption of lumber per capita is rapidly decreasing.

I quote the following, which is significant in that it shows what one of the substitutes is doing:

"Mr. Thomas L. Shilton, of eastern Pennsylvania, an officer of a cement company, made the following statement in Seattle:

> 'It took us a great many years to convince the department of engineers of the United States Government that concrete was better for construction material than stone. Since then, however, concrete has become the preferred material in all construction work. Within ten years we expect to see concrete used almost entirely in all the building construction. Our sales have increased more than ten-fold in the last five years and the business is still in its infancy.'"

The figures I have given you from Government reports show that the 1912 output was 296,718,000 feet more than the average for six years, while the average figures for 1911 and 1912 show that the output for the two years was 781,000,000 feet less than the average for the last six years. If these figures do not convince you that the demand for lumber is diminishing in the face of an increasing population and constantly increasing development they certainly prove that the demand is not increasing. Had there been any time in the last six years when the mills could have been operated continually to their full capacity, or were operated to their full capacity, and the market was not supplied, it could be argued that these figures were not significant, but the facts are, as you all know, that there has been no time in the last six years when the demand for lumber has not been fully supplied and, the greater portion of that time, the supply has been so much greater than the demand that lumber values were sacrificed in order to move the output of the mills, operated as they were on a reduced scale a portion of the period under consideration.

Creating Markets.

With our shipping laws in the present form we can look for no help in developing export business from American shipmasters. There is no doubt but this is the most potent channel through which we could develop foreign trade, but it is so blocked by adverse laws that its use is denied us. The only hope we seem to have to stem the tide of substitutes is by methods of marketing, through development of our waste places, and creating a great demand for lumber.

The most important problem that confronts us today is the question of marketing. It is a problem of such magnitude that no halfway measure will solve it. The best brains in the business should be called upon for assistance and advice. It is of such vital importance that every man that owns a mill or a tree should render his assistance, financially or otherwise, to devise means by which the value of their asset will be protected. Money, and money only, will accomplish the desired result. It takes money to secure brains; it takes money to secure the kind of men we want; it takes money to place in a convincing way before the public the suggestions you want to make. We have in our line as good men as you can find, yet it takes money back of them to accomplish results. What we have to do today is to make a market, and it costs money to build anything, and, while building a market will cost a large sum of money in the aggregate, if each one who owns a mill or a tree will contribute his share the amount necessary will be raised without imposing a burden on anyone.

Ways and Means.

In the States of California, Oregon, Washington, Idaho and Montana there is, according to Government reports, 1,512 billion feet of standing timber, of which 1,013 billion feet is privately owned; the balance is owned by the Government, the States, and is unreserved public land. An assessment per annum of 1/16 of a cent per thousand on the standing timber privately owned in the aforementioned States would create a fund of $633,125 annually. Based on the timber privately owned in the States of Oregon, Washington and California west of the Cascade Mountains, the estimate of standing timber being 867 billion feet, 1/16 of a cent annually assessed would give an annual fund of $451,875.

It is hard to determine correctly how much privately owned timber there is in the States of Oregon and Washington west of the Cascade Mountains, but the Government estimates show that there is 867 billion feet west of the Cascade Mountains in the three States of Oregon, Washington and California, and only 146 billion feet in the eastern portion of this region. The Government estimates further show that there is 692 billion feet of privately owned timber in Oregon and Washington. In order to be safe, I deduct from the 146 billion feet in the three States east of the mountains, which leaves 546 billion feet of privately owned timber west of the mountains in the States of Oregon and Washington. One-sixteenth of a cent annually assessed would give a fund annually of $341,250. This would mean that if you own 1,000,000 feet of timber your assessment would be 62½ cents; if you own 10,000,000 feet of timber, your assessment would be $6.25; if you own 100,000,000 feet of timber your assessment would be $62.50. An assessment of this nature would not bear heavily on anyone.

We could spend profitably in direct advertising the first year $30,000. This would probably be doubled the second year, or $60,000; this again would probably, to be effective, want to be doubled the third year, or $120,000. Probably this would be the limit that could be used economically in effective advertising. Taking the sum of $120,000 from $341,250 would leave you $221,250 for other methods of market development other than advertising of a suggestive nature. This sum could be profitably used in the development of foreign markets.

Cultivating Home Markets.

A portion of this could be used to advantage in developing our home market through organized effort to settle our logged-off land and further irrigation projects. The heaviest per capita consumers of lumber I think without question are the settlers on new lands, as their buildings are made practically entirely of lumber. As the day of Government land is practically past the demand that we got for lumber from the opening up of new country has ceased and the only way we can revive the trade is by developing, through organized effort, the waste lands that can only be developed by assistance given financially to settlers. The logged-off lands of western Washington are very productive, but are so hard to clear that people without means can not go on them and build up homes as they did on the prairie States.

Distributing and Applying the Fund.

The cut of lumber in the five States of California, Oregon, Washington, Idaho and Montana for the year 1912 was 8,204,743,000 feet. If the lumbermen of these States work to raise a fund of money each year equal to an assessment of 1/16 of a cent per thousand feet on their standing timber, which would amount to $633,125, and use it in building up a market, should the results of their efforts advance the price of their annual output of lumber 10 cents per thousand feet it would increase their return $820,474.30. If through their efforts they advance their price $1 a thousand feet it would increase their return $8,204,743; and it is not too much to assume that by the judicial expenditure of over one-half a million dollars a market could be made that would result in an advance of $1 per thousand feet on your lumber.

The cut of lumber in Oregon and Washington west of the Cascade Mountains is practically 5,000,000,000 feet. If on this amount with the expenditure of $341,205 you could increase your price 10 cents per thousand feet it would increase the value of your output $500,000. If you increase the price $1 per thousand feet it would increase your return $5,000,000.

These returns are so inviting that it seems to me that they demand your earnest attention. They indicate what united effort can accomplish, and show what a considerable sum can be raised without putting a heavy burden on anyone should all who are interested contribute.

The meeting adjourned about 3:30. Those in attendance were:

OREGON. Portland—W. B. Mackay, North Pacific Lumber Co.; G. B. McLeod, Hammond Lumber Co.; J. J. Herlihy, Beaver Lumber Co.; F. C. Young, West Side Lumber & Shingle Co.; J. N. Teal and F. G. Donaldson, West Coast Lumber Mfrs.' Ass'n; F. C. Knapp, Peninsula Lumber Co.
Sheridan—Fremont Everett, Sheridan Lumber Co.
Cascade Locks—J. H. Dunlop, Wind River Lumber Co.
Wauna—H. S. Mitchell, Crossett Western Lumber Co.
Dallas—George Gerlinger, Dallas Lumber & Logging Co.
Eugene—A. C. Dixon, Booth Kelly Lumber Co.
Astoria—R. S. Shaw, Hammond Lumber Co.

WASHINGTON. Seattle—E. G. Ames, Puget Mill Co.; F. W. Alexander and L. C. C. Laurson, Pacific Lumber Ins. Bureau; H. Kirk, Seattle Lumber Co.; H. B. Krebs, H. B. Waite Lumber Co.
Tacoma—W. C. Miles and Thorpe Babcock, West Coast Lumber Mfrs. Ass'n; C. E. Hill, Tacoma Mill Co.; J. W. Dempsey, Dempsey Lumber Co.; J. T. Gregory, Fir Tree Lumber Co.; G. A. Brewer, Lumber Information Bureau.
South Bend—George Cartier and E. L. Gaudette, South Bend Mills & Timber Co.
Everett—H. W. Stuchell, Eclipse Mill Co.
Raymond—B. H. Lewis, Creech Bros. Lumber Co.

MINNESOTA. St. Paul—R. H. Noyes, Weyerhaeuser Timber Co.

CALIFORNIA. San Francisco—E. C. Stone, Grays Harbor Commercial Co.

FINANCIAL

TIMBER LOANS
ON
High grade accessible standing timber owned by established, going lumber companies in any amount from $200,000 up.
Correspondence and Personal Interviews Invited.
Devitt, Tremble & Co.
INVESTMENT BONDS
First National Bank Bldg., CHICAGO

This House Engages Exclusively in
FINANCING LUMBERMEN
Our booklet, "The F. A. Brewer & Company Plan of Financing Lumber and Timber Companies", will be furnished upon request.
F. A. BREWER & CO.
TIMBER LAND BONDS
Commercial Nat'l Bank Bldg.
CHICAGO
PORTLAND OFFICE, 405 Concord Bldg. WELLS GILBERT, Representative. Oregon and California.
SEATTLE OFFICE, 1107 American Bank Bldg. E. T. CLARK, Representative, Washington and British Columbia.

Assets Realization Company
CAPITAL AND SURPLUS $11,000,000
Assists banks and bankers in realizing on paper of involved corporations.
Correspondence Invited
NEW YORK 25 Broad St. PHILADELPHIA Lafayette Bldg.
CHICAGO 29 First National Bank Building

The American-Credit Indemnity Company
OF NEW YORK
Insures Wholesale Lumbermen against excessive loss through insolvency of customers.
The stupendous amount of annual loss by bad debts makes Credit Insurance necessary.
Loss Payments to Policy Holders over $8,400,000.00.
302 Broadway, NEW YORK — Marquette Bldg., CHICAGO — 415 Locust St., ST. LOUIS

Read R. E. Danaher Company Ad Page 88.

FINANCIAL

Loans on Timber Lands

For Long Periods of Time in Amounts from $100,000 up.

We have been in the lumber business for over thirty years.
We now control and operate a number of mills.
We have been loaning money to lumbermen for many years.
These facts make us especially fitted to know the wants of lumbermen, and to meet them.

LYON, GARY & CO.
140 South Dearborn Street
CHICAGO

We invite correspondence with Lumbermen wanting Loans on Timber Lands.

C. H. MOORE & CO.
New York Life Bldg.,
CHICAGO, ILL.

Loans on Timber

We are in a position to make loans of $200,000 or over secured by first mortgages on high grade standing timber of accessibility and owned by lumber companies that are well established. We would be glad to get into touch with your needs.

W. G. Souders & Co.
BANKERS
809-812 Westminster Building,
Monroe and Dearborn Sts., CHICAGO

We are Prepared to Buy Entire Issues of

Timber Bonds

Secured by first Mortgage on Pine or Hardwood Timber Lands.

CAPITAL AND SURPLUS $3,000,000

The First National Bank of Detroit, Michigan.

Bond Department, Harry M. Tingle, Manager.

GRANT T. STEPHENSON
CONSTRUCTING ENGINEER
Wood Distillation Plants for Utilization of Wood Waste.
WELLS, MICHIGAN

NEWS OF THE ASSOCIATIONS.

COMING CONVENTIONS.

October 14-16—Carriage Builders' National Association, Coliseum, St. Louis, Mo. Annual meeting.

October 22—Northwestern Association of Box Manufacturers, Hotel Portland, Portland, Ore. Special meeting.

October 23—North Carolina Pine Association, Charleston, S. C. Semiannual meeting.

October 27-29—Southern Commercial Congress, Mobile, Ala.

November 18—Southern California Retail Lumber Dealers Association, Los Angeles, Cal. Annual meeting.

November 18-20—Fifth National Conservation Congress, Washington, D. C.

January 19-20—Retail Lumber Dealers' Association of Indiana, Indianapolis, Ind. Annual meeting.

January 28, 29—Pennsylvania Lumbermen's Association (Inc.), Philadelphia, Pa. Annual meeting.

January 28-30—Southwestern Lumbermen's Association, Kansas City, Mo.

January 30, 31—Retail Lumber Dealers' Association of the State of New York, Ten Eyck Hotel, Albany, N. Y. Annual meeting.

SPECIAL MEETING OF NORTHWESTERN BOX MANUFACTURERS.

The Northwestern Association of Box Manufacturers has called a special convention of its members and all manufacturers and consumers of berry hallocks in Oregon, Washington and Idaho, to be held at the Hotel Oregon, Portland, Ore., October 22 at 10 a. m. This meeting is called for the express purpose of adopting standard dimensions for the quart and pint berry hallocks, as provided by the law passed by the recent legislature of the State of Washington, which provides that the quart hallock contain 67.2 cubic inches and the pint hallock 33.6 cubic inches. Since many of the hallocks manufactured in the Northwest are sold in Middle West and Eastern States where similar laws exist and because city ordinances in many of the larger towns have provisions regarding this important matter, the problem is considerably complicated and it will be the purpose of this convention to adopt dimensions in harmony with existing laws and ordinances. The standardization of the pint and quart berry cups will necessitate a restandardization of existing crate specifications, which matter will also be given attention.

The convention will be attended by representatives of fruit associations, large growers and distributers, as these have a vital interest in the proposed standards. It is expected that a full representation of all those concerned will be had and that the convention will result in uniformity of practice throughout the manufacturing and berry-growing regions of Northwestern States.

"THE IDEAL OF A COMPETITOR."

Moberly, Mo., Sept. 27.—A meeting of the North Central Missouri Retail Lumber Dealers' Association was held here tonight. Twenty-eight retailers attended. M. M. Riner, of the Riner Lumber Company, Kansas City, Mo., spoke on "The Ideal of a Competitor," and following his speech there was a general discussion of topics of interest to retail dealers. It was arranged to hold the annual meeting of the association the first Saturday in December. C. J. Bunter, of Kirksville, Mo., is president and L. D. West of Fayette is secretary.

SOUTHERN CALIFORNIANS IN ACTION.

Los Angeles, Cal., Sept. 29.—At a special meeting called recently by the Southern California Retail Lumber Dealers' Association a number of changes were made in its by-laws. The most important was that of the "object of the association." Formerly this clause read:

The object of this association is and shall be to secure and disseminate to its members any and all legal and proper information which may be of interest or value to any member or members thereof in his or their business as retail lumber dealers, and to carry into actual effect our declaration of purpose.

The new "object of the association," which was passed at this meeting, reads:

The object of this association is to provide for its subscribers those industrial services which will enable them to secure for their business its full productiveness and to assist them in obtaining and maintaining public recognition and appreciation of their position as community builders and loyal citizens.

Another important measure was the changing of the number of directors from eleven to nine. Recently R. H. Pitcher, manager of the National Lumber Company, Pomona, resigned from the board of directors and his place was not filled. At the annual meeting, November 18, new directors will be elected, three for one year, three for two years and three for three years each. At all following elections the directors will be chosen to hold office for three years.

Following this meeting a dinner was served in the Union League Building at which over 100 lumbermen were present. O. H. Barr, of the Barr Lumber Company, Whittier, acted as toastmaster. The first speaker was W. T. Dennister, of the advertising department of the Western Retail Lumbermen's Association, who made an interesting address on matters pertaining to his work. He was followed by R. H. Raphael, of the Southern California Hardwood & Manufacturing Company; W. T. Brown, of the Brown & Dauser Company; E. U. Wheelock, manager of the Consolidated Lumber Company, and Mr. Crosier, of the Southern California Lumber Company.

In speaking of the annual meeting, to be held the third Tuesday in November, Secretary C. F. Smith says:

It is our desire to have some good speakers on the different subjects that are of interest to the retail lumber dealer, and we are trying in the meantime to impress on those few who are not members the advantages of being with us and working with us, to make our organization one that shall stand for the benefit of the communities in which retail yards are established—one whose members shall command the respect of the community for business integrity and public enterprise, and an association that every retail member should consider it an honor to belong to.

Ninety percent of the retail lumber yards of southern California are now members of this association, and while we can hardly expect to make it 100 percent that is the mark we have set.

MASSACHUSETTS WHOLESALERS MEET.

Boston, Mass., Sept. 29.—A meeting of the Massachusetts Wholesale Lumbers Dealers' Association, was held last Friday at Young's Hotel, with a reception at 5:30 and dinner at 6 p. m. The guest of the evening was Joseph A. Conroy, acting chairman of the Port of Boston directors. Mr. Conroy, with the assistance of a map, outlined the work that the directors have accomplished, and work they have under consideration. A cordial vote of thanks was extended to Mr. Conroy, also the support of the association in the task the directors have undertaken to make Boston one of the foremost ports of the world.

Charles S. Wentworth was delegated to attend the Massachusetts Board of Trade convention.

The Conway Lumber Company was elected to membership and a resolution was passed inviting the National Wholesale Lumber Dealers' Association to hold its next annual convention, in March, at Boston. The meeting was attended by more than forty members.

PROVIDING FOR THE LADIES.

Houston, Tex., Sept. 30.—In pursuance of a plan adopted by that organization to hold ladies' nights at least once a month, the directors of the Lumbermen's Club of Houston have set apart Friday night, October 3, for the first entertainment of this kind. On that night the members will bring their wives or sweethearts and the entertainment will be in the nature of a dinner, followed by a dance in the handsome ball room of the Bender Hotel, adjoining the club rooms. The Lumbermen's Club of Houston is in a flourishing condition and is constantly increasing in membership.

A COMING INDIANA AFFAIR.

Evansville, Ind., Oct. 2.—Paul W. Luhring, Vicegerent Snark for this district, presided at a meeting of the order last Saturday to complete arrangements for the concatenation that will be held in this city on the afternoon of Friday, October 24. It was decided to start the concatenation at 3 p. m. In the evening members and lady guests will enjoy a banquet at the New Vendome Hotel. Paul W. Luhring, E. S. O'Hara and A. C. Karges have been appointed as a committee on general arrangements. The following have been named as a committee on entertainment, their wives to serve with them: A. C. Karges, Thomas Hanley, J. C. Greer, Harry Massie, George O. Worland, Elmer D. Luhring and Charles A. Wolflin.

FROM THE ALABAMA IRON CENTER.

Birmingham, Ala., Sept. 29.—Lumber dealers are still far from feeling elated over the prospects of their trade. Dealers say there is no demand for their product, and business is practically at a standstill. But in spite of the fact they report sales badly off prices have not declined materially, and dealers are demanding the same price for their lumber as when business was booming. This would lead to the belief that lumbermen expect a change of conditions in a short time. Another circumstance to be considered is the fact the retail lumber dealers have been carrying large stocks, and the wholesale dealers have not been called upon for any large orders. The retail merchants are not so pessimistic as the wholesalers.

An important act of the City Commission of Birmingham will go into effect this week. It is the measure known as the "antishingle roof ordinance," and there is stern opposition to the measure. The lumber interests of the city have declared the measure hurtful not only to their interests, but to householders. Under the provisions of the new ordinance it is against the law for any person to construct a dwelling or building of any sort with a shingle roof. In cases where roofs are destroyed, or torn out, if less than 20 percent of the surface is repaired shingles may be used; if more than 20 percent nothing but fireproof material can be used. A week ago an amendment to the ordinance was made by City Attorney Romaine Boyd, which the commission adopted. The amendment provides that each offense against the ordinance makes the offender liable each day to arrest. It seems to be the sentiment of the lumbermen to allow Birmingham to try the ordinance, believing as they claim, that the citizens will find it so burdensome to follow that they will logically repeal it ultimately. Another phase in the situation is the fact that a number of real estate men are contemplating a movement against the ordinance, as the cost of construction will be greatly increased under the new regulations. The lumbermen will leave the field clear for the real estate men.

LEAVES LARGE ESTATE.

Duluth, Minn., Sept. 29.—The late John McAlpine, a wealthy lumberman who was found dead in the basement of his home about six weeks ago, and who is believed to have been murdered, left an estate that is estimated at over $1,000,000, and subject to some rather large encumbrances. John D. McDonald, who was private secretary for Mr. McAlpine, testified in probate court regarding the estate. At the time of his death Mr. McAlpine was indebted to a local bank for $95,000. The estate owns about $300,000 worth of property in St. Louis County, Minn., and timber in several of the Western States, and in British Columbia. The will has been admitted to probate in St. Louis County, at Duluth. The estate goes to the widow, with the exception of $15,000 of special bequests. The death of McAlpine remains as much a mystery as ever. The September grand jury could not solve it, and there have been no further developments since the jury adjourned.

LUMBER CLUB ACTIVITIES.

To Resume Fall Work—Final Outing for Year—New Organization—Ladies' Day.

ST. LOUIS, MO., Sept. 30.—The first fall banquet and business meeting of the Lumbermen's Club of St. Louis will be held during the last week in October or the first week in November, at one of the down-town clubs or hotels, but probably at the Mercantile Club.

The banquet and business meeting were originally to be held one evening in the early part of September, but owing to the fall festivities taking place at that time it was thought best to hold them later, until after the festivities were over, thereby insuring a larger attendance.

It will be known as "Architects' Night." Several architects of national reputation, not only from St. Louis but from Kansas City, Chicago and other large cities, will be the guests of the club. They will give talks from the architect's viewpoint. The speakers for the lumber interests will be J. C. White and R. A. Long, both of Kansas City, and representing large interests in the lumber business of the country.

Julius Seidel, the chairman of the entertainment committee, and his associates on the committee are arranging an elaborate program and menu and the banquet promises to be one of the most entertaining and instructive ever given by the club, and that is promising a good deal. All the gentlemen on the committee know how to provide a first-class entertainment, as those who attended the several functions during the Hoo-Hoo convention during the early part of September well know. The topic to be discussed will be "Commercial Sizes of Lumber."

The Lumbermen's Club of St. Louis has become one of the best known and foremost organizations of its kind in the United States. This is especially true of last year, during the administration of its president, Thomas C. Whitmarsh, ably assisted by Secretary Pier and the various committees, who work together in every way possible for the benefit and betterment of the club.

Its membership includes a majority of the lumbermen of the city and it gives consideration to the interests of the lumber business, to the conservation of various methods in manufacturing and distributing lumber, to congressional movements and in seeking every way possible to bring the lumber interests into unity.

The club maintains a suite of rooms in the Wright Building, where is a reading room where can be found all the principal lumber trade journals of the various cities in the United States and Canada, as well as statistical and reference matter. Visiting lumbermen are always welcome. During the coming winter the club will continue its activities and will broaden them when an opportunity occurs.

The membership committee, of which C. M. Jennings is chairman, is a working committee and there are good prospects of a large increase in its membership, as the lumbermen fully realize that to accomplish anything there must be coöperation and association.

ST. LOUIS, MO., Sept. 30.—The Lumbermen's Club of St. Louis will give another buffet luncheon in its club rooms in the Wright Building, on Thursday, October 9, between 12 m. and 2:30. There will be plenty to eat and drink, good music and good cheer and an invitation has been extended to all lumbermen in St. Louis and St. Louis County, and to all visiting lumbermen, whether they are members of the club or not, as well as to railroad officials and the members of the local and trade press. The invitation is also made to include the planing mill industry. The buffet luncheons given by the club have been very popular and are growing more in favor with the lumbermen and their friends.

BEAUMONT LUMBERMEN'S CLUB.

BEAUMONT, TEX., Sept. 29.—The Beaumont Lumbermen's Club is preparing to resume activities after the hot summer season and the organization will start off with a rousing meeting and banquet October 1. Arrangements for the affair are being made by President Hubert B. Oxford and Secretary A. J. Kaulbach, and it is the purpose to make this, the initial meeting of the fall, one of the most interesting events pulled off by the club in years. Addresses will be delivered by lumbermen of prominence throughout southeastern Texas and southwestern Louisiana and final arrangements will be made at that time for Lumbermen's Day at the Southeast Texas Fair to be held here in November.

FINAL OUTING OF THE LOUISVILLE CLUB.

LOUISVILLE, KY., Oct. 1.—The final summer outing of the Louisville Hardwood Club was held last night, P. G. Booker, president of the Booker-Cecil Company, entertaining about twenty lumbermen at his country home, "Nitta Yuma," near Harrod's Creek, 18 miles east of Louisville. The trip was made by automobile, the run being made over the River road. A chicken dinner greeted the lumbermen on their arrival. Mr. Booker has just recovered from a long siege of typhoid fever, and the dinner signalized his return to active business. He received the hearty congratulations of his guests.

PINCH HITTER TURNS TRICK.

CLEVELAND, OHIO, Oct. 2.—Never was a better chicken dinner served than that enjoyed by the members of the Cleveland Lumber Club and their ladies at the club's ladies' day outing at Silver Lake, Saturday, September 27. It was a good thing that the next day was Sunday. About sixty members and ladies were present and as much fun was had on the special car going to and from the lake as at the resort. The park being closed for the season the club had practically everything their own way. The baseball game was the main outdoor event. The supper was served indoors. The two Georges, Meyers and Barner, chose ten men on each side and went at it. The Meyers gang narrowly won out by a score of 23 to 21 after allowing the Barner bunch 8 runs in the first inning. The sides were as follows: Barner bunch: Southern, A. Teare, Blair, Flandermyer, Peitch, Krauss, Rankin, Comfort, Klumph and Barner. Meyers gang: Meade, Cramer, Blake, Harwood, Diamond, Porter, H. Teare, Hitchcock, King and Meyers. The game may be contested as a pinch hitter was substituted cleverly for King each time he was supposed to come to bat.

HARDWOOD CLUB ORGANIZED.

DETROIT, MICH., Sept. 29.—Hardwood dealers have organized the Detroit Hardwood Club with J. J. Scranton, president; William E. Brownlee, vice-president; J. K. Sicklesteel, secretary, and C. F. McClue, treasurer. The purpose of the organization is to handle the local hardwood lumber business in a systematic manner. A credit bureau will be established and the association members will have the benefit of a business organization. Practically all the firms in the city having lumber yards are in the association. The members are already planning several social affairs for the coming winter to establish a spirit of goodfellowship in the organization.

LUMBERMEN'S EXCHANGE OF ST. LOUIS.

ST. LOUIS, MO., Sept. 30.—A directors' meeting of the Lumbermen's Exchange of St. Louis will be held Thursday, October 2. This will be the first meeting since the summer recess and it is said that the report of the secretary to the directors will indicate an excellent condition of affairs.

During the last three months, the local lumber inspections of the exchange have exceeded the 700,000 foot mark. In addition are inspections in Ohio, Indiana, Illinois and Michigan.

EASTERN RETAILERS ORGANIZING.

Pennsylvania Association Fathered by Pittsburgh Lumbermen—Addresses and Entertainment.

PITTSBURGH, PA., Sept. 30.—One of the best meetings held this year of the board of directors of the Retail Lumber Dealers' Association of Pennsylvania took place last Friday evening, September 24, at Beaver Falls. Thirty retail lumbermen of Beaver Valley attended and steps were taken for the formation of a retail lumber dealers' association of this valley, similar to the associations of other communities. The meeting of the board was held by invitation of Beaver Valley retailers at the Tamaqua Club. A delegation of officers and directors from Pittsburgh and vicinity went to Beaver Falls on a special train, arriving there at 6 p. m. Automobiles met them and at the Tamaqua Club a delightful chicken waffle dinner was served.

F. E. Lillo, of Oakdale, president of the State association, was master of ceremonies at the dinner and also at a meeting later. H. V. S. Lord, State secretary, was present and others from the Pittsburgh district included George Glass, Elmer A. Diebold, J. J. Munn, E. P. Texter, C. P. Mayer, all directors and active members of the State organization. It was a get-to-gether affair, in which the spirit of sociability dominated.

George N. Glass, of the Keystone Lumber Company, of Pittsburgh, talked on overhead costs of doing business, a subject that was closely identified with problems of the trade in Beaver Valley. He also spoke of the growth of the association movement all over the State and cited the manner in which the Pittsburgh Lumbermen's Club was formed by a few and has grown to one of the best organizations of its kind. Elmer A. Diebold, secretary of the Pittsburgh Lumbermen's Club, talked along the lines of lumbermen's clubs and what they can do for lumbermen. J. J. Munn talked of the benefit of closer personal relations among lumbermen and also of the cost of handling lumber by the retailers.

G. P. Texter, of Wilkinsburg, told of the benefits of organization, and C. P. Mayer, of Bridgeville, made an impression by his talk on the actual benefits of good fellowship among lumbermen in the retail trade. The entire gathering was animated by the one idea. Those present spoke emphatically on the evils and difficulties that they were meeting in the trade and then admitted that a better acquaintance with each other would help all alike and place the retail trade on a better footing. This was such a universal opinion among the lumbermen present that, before the meeting had adjourned, J. D. P. Kennedy, of Beaver Falls, was made chairman of a special committee of retailers of Beaver Valley to prepare a plan for the organization of a local association.

The committee of local men was made up of Mr. Kennedy as chairman; Orlin McDanel, of the R. B. McDanel Company, of New Brighton; F. C. O'Rourk, of the Martsoff Bros. Company, of New Brighton; Charles Haney, of Teapole & Haney, of Rochester, Pa., and F. C. Cook, of Anderson & Cook, of Beaver.

The Department of Commerce has compiled a condensed history of duties and practical operation of the department and its several bureaus and offices which will be published in one volume and be ready for distribution October 1. Copies of this publication will be furnished upon request to commercial and trade organizations for distribution to those interested.

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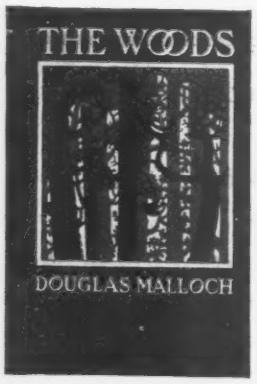
Written by the inimitable Malloch, "The Lumberman Poet", whose every sentence is an essay on life touching some part of the great lumber world. A more appreciated present from one friend to another could scarcely be found than is offered in these books.



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In the front rank—*Nashville Banner.*

"The Woods" is beautifully bound in cloth (size 5½x8"—135 pages) with appropriate colored cover design and will be sent postpaid for . . . **$1.00.**

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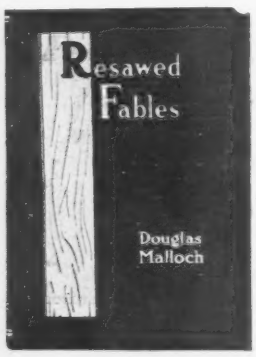
Lumbermen all enjoy it because it talks of their world and in their language. It's the book that sold faster than we could print it, the first edition being exhausted in four weeks. You can make no mistake in giving it to a friend. Designed particularly for gift and library purposes—printed in old style type on antique paper, bound in silk green cloth, gilt top and gold stamped, and illustrated in tint. Price, postpaid, **$1.25.**



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THE LUMBERMAN POET

BABY UP AT OUR HOUSE.

Baby up at our house,
(Call her Amy Jean);
Little bit of wee thing
Ruling like a queen.
Up the stairs and downstairs
Other people fly—
Baby up at our house,
That's the reason why.

Baby up at our house
Pinker than a rose;
Wrinkled in the forehead,
Puggy in the nose.
Silently on tiptoe
People hurry by—
Baby up at our house,
That's the reason why.

Baby up at our house
"Sister, go and play."
"Brother, stop the noise, dear,
Put the drum away."
Candy and havanas
Father has to buy—
Baby up at our house,
That's the reason why.

Baby up at our house,
Nurse's word is law;
Such a topsy-turvy
No one ever saw.
Ev'rybody worried
If they hear a cry—
Baby up at our house,
That's the reason why.

Baby up at our house,
Neighbors all agog;
Stopper in the door-bell,
Muzzle on the dog.
Lena in the kitchen
Making cake and pie—
Baby up at our house,
That's the reason why.

Baby up at our house,
Father has to wait;
No one in the office
Cares if he is late.
If a little error
Slips unnoticed by,
Baby up at our house—
That's the reason why!

P. S. This is no joke.

QUERY AND COMMENT

Open for Experiences, Ideas, Questions and Opinions — **What Would You Know? What Do You Know? Write Us About It.**

Shingles to Come in Free.

Can you tell us how matters stand at Washington with reference to the tariff on Canadian shingles. Do they go on the free list?—MacGillis & Gibbs Company, Milwaukee, Wis.

[No duty is proposed on import shingles in the tariff bill now pending.—Editor.]

Market for Mill Waste of Insulator Pins.

Can you advise us where we can find a market for locust sawdust; also locust turnings?

[This inquiry comes from a manufacturer of locust insulator pins in Pennsylvania. For sawdust in general the chief uses have been for bedding and as a sprinkling for floors. The use of moist sawdust in this way in sweeping is a common practice. For some kinds of sawdust special uses are developed, such as the use of boxwood sawdust by jewelers. It is not known that locust sawdust has any special higher use than sawdust in general and considerable research might be necessary to establish this point.

As to locust turnings, various forms of these might be applied to widely divergent uses and an inquiry in this regard should be made of manufacturers of tool handles, of toys, and of wood novelties in general. Special uses of wood have been well developed in the East and the inquirer will be furnished with suggestions as to how to go about developing this field.—Editor.]

Piece Work System in Planing Mill Operation.

We would like to know if any of the readers of the American Lumberman have had experience with the piece work wage system in connection with the operation of a planing mill such as ours for the getting out of miscellaneous millwork. We refer to such an establishment as is operated in connection with a retail yard, particularly in the larger cities and not, of course, to a planing mill operated in connection with a sawmill at a manufacturing point.

[This opens up an interesting subject, which has been set for investigation as Inquiry No. 80. It is from a large retail and planing mill concern in a thriving city in the Middle West. Readers that have tried the piece work plan are invited to give their experience with it.—Editor.]

Lumber Companies in South America.

Will you please send me a list of the titles and locations of the different lumber companies in South America?

[The inquirer has been supplied with a list of lumber companies in Peru and investigation is being made for similar addresses in other South American countries.—Editor.]

THE COAL TRADE

Forecasts of the coal trade have not vanished into thin air, for the shapings of the market during September into a thing of strength and activity have been realized. October enters with trade fully up to standard for this time of year, in point of volume and in price. And with the advent of the new month operators in the West have strengthened their lines of quotations. Pioneers in the Franklin County (Ill.) field have gone to $2.25, mines, for 6-inch lump in some instances, and the market may be quoted from $2 to that figure; that is, for the choice products. And throughout southern Illinois in general the top is climbing steadily from the $1.75 to the $2 level.

Now, if ever, the western demand should be brisk, and brisk it is. Brisk it will probably continue till the first purchases are completed, first autumn purchases by the consumers often representing only a ton or two each, but, aggregated, requiring an enormous tonnage. And so far as the southern Illinois field is concerned the temporary suspension of the mines of the largest producer in Saline County, owing to financial embarrassments, has given additional impetus to the market, for the mines of that company had recently been getting above ground 12,000 tons of coal daily.

The car supply is not interfering with the production of coal to the extent that it was beginning to do at this time a year ago. Complaints about car shortage at mines continue, and no doubt with reason. The stoppages are frequent and to those affected annoying, but they have not reduced the output enough on the whole to endanger the receipts of some kinds of coal by the buyer. The most popular mines are, of course, bearing the main brunt of the insufficiency of equipment, for they are the sources overburdened with orders, and the suspension of mining only one day a week causes them to fall behind with their orders, whereas the mine that is only comfortably supplied with orders can stand that amount of idleness without serious embarrassment. Orders are no doubt backing up to some extent. This puts the edge on the market and it will continue until the producer again becomes hungry for business. Two considerations promise just now to prevent an unusually protracted strong market: the current relatively better condition of the car supply and the absence thus far of any panicky buying. For when coal becomes scarce the buying grows to bounds far beyond the actual requirements, distributors duplicating or triplicating their orders with different shippers in the hope of getting action somewhere. A riot of buying generated that way is inevitably followed by a period of depression, once the steam gets out of the trade. And if the present bulge in the trading passes away without reckless and intemperate purchases the lapse into a moderate market will be the more leisurely and sedate. There will not be the vast number of refused cars distributed throughout the west that will have to be disposed of at sacrifice prices. In other words, the present market bears all the symptoms of sanity and legitimate needs—as yet.

The price of 6-inch lump has advanced within the last month so much more rapidly that that of egg and nut, which are likewise domestic preparations, that by comparison the smaller sizes have become so attractive to buyers that stocks have been thoroughly cleaned up and the market for them has been advancing to something like the same relative extent as for 6-inch lump. Western screenings are not conspicuous for either strength or weakness, though some shading of previous quotations is reported.

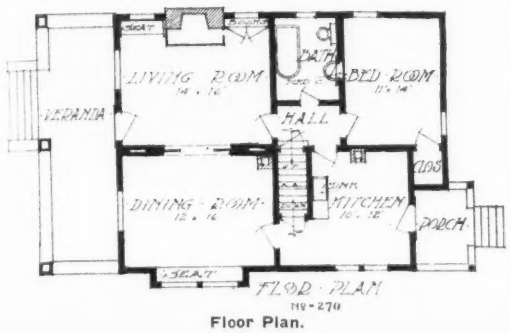
Eastern bituminous coals are sharing in the activity that has been noted in the western products, and among the eastern coals is a relative dearth of tonnage available for immediate attention. This is because it takes longer for shipments from mines to reach the western market and also because a sharper inquiry for coal seems to have sprung up in the East as well as in the West, so that the producing companies have not available the larger number of cars called for to satisfy western trade. Hocking is a shade stronger, and is quoted firm at $1.75 to $1.85, mines, or $3.40 to $3.50, Chicago. Smokeless lump and egg, while nominally $2.50, mines, are likely to be quoted at a premium on account of the absence of offerings. The chillier weather seems to have given the producers all the market they need, even with the lake trade tapering off in volume.

To make the activity complete, a decidedly better tone to the anthracite market may be recorded. The inquiries are no longer backward. Users have been brought face to face with the gauntness or the bareness of their coal bins and have risen to the situation. The anthracite coal trade presents a spontaneity that was absent all summer. Orders are presented by mail and even in instances by wire, with request for hurry shipment. There is no waiting till the salesman appears to save the merchant the trouble of writing. Some shippers have advanced prices 10 cents a ton October 1 in lieu of the much advertised Pennsylvania tax, and a general advance to that extent is rumored. The tax is said to have been imposed throughout the East to a more uniform extent than in the West, where only one of the large producing companies has lately been passing on the extra cost to the retail distributers.

AMERICAN LUMBERMAN BUILDING PLANS.

No. 24 A Low Cost, Four Room, One-Story Cottage—Ample Storage Space in Attic—Built-in Fireplace, Bookcases and Seat.

The plan this week is of a one-story cottage, estimated at a cost, under average conditions, of about $1,200. The exterior appearance and interior arrangement will be well understood from the illustration herewith. There is one bedroom. The entrance to the attic is provided from a short hall connecting the living room and bedroom and entrance to the basement is from the kitchen. There is, of course, ample storage space in the attic. The basement plan contemplates the excavation of a little over half the foundation space. The plans include four elevations; floor plans for basement, first floor and layout of attic and details of the fireplace, bookcases and seat.

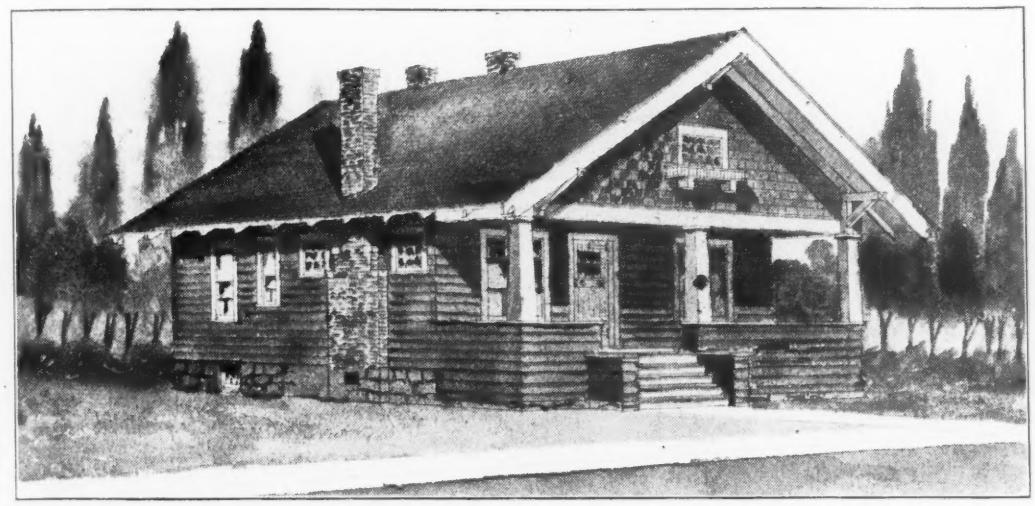


Floor Plan.

The blue prints, bill of materials and specifications will be sent for $1.50. An advertisement of the house suitable for use in local papers will be supplied together with electrotypes of the two cuts here shown for $2.

HOUSE PLAN SEPTEMBER 27 WAS No. 23.

Through a typographical error the house plan published in this department in the issue of September 27 was incorrectly numbered 22. The serial number should have been 23, and those desiring to communicate with the AMERICAN LUMBERMAN in regard to the plan published September 27 will confer a favor by referring to No. 23 and also to the date of the issue, so that their communications may have prompt attention. The plan published in this week's paper thereby becomes plan No. 24.



AMERICAN LUMBERMAN'S HOUSE PLAN NO. 24, DESIGNED BY THE BALLARD PLANNERY COMPANY.

SASH, DOORS AND MILLWORK

The consensus is that the mills are having enough work to keep them busy even if orders are not of a rush character, and while retail dealers and jobbers throughout the country are not buying as liberally as was hoped, there is much sorting-up of stocks and it is reported that the number of orders arriving are increasing, both as to volume and size. Carload trade is slow. The feature of the market is the demand for special work. Factories and jobbers catering to this class of trade say that they are all busy, their estimating departments finding it difficult to keep up with the number of inquiries being received. Stocks at the big factories of the Mississippi and Wisconsin Valleys are held in seasonable quantities and wholesalers seem to be well supplied. It is believed, however, that with anything like a normal demand this fall stocks are none too large. Prices are generally well maintained. Some unevenness is reported at several points, but as a whole prices are more stable than for several years.

Building operations in Chicago and vicinity are active enough to keep the factories working full time. A better inquiry is reported from out of town. This has contributed more than a little in keeping the plants engaged. Activity in building in the outlying districts of the city has been a feature in giving the sash, door and interior woodwork people plenty to do, and although competition has been fairly active, at all times moderately good prices are being realized.

Heavy city trade is the feature in the Northwest and Minneapolis and St. Paul factories are not getting as much country yard business as they have had reason to expect. Buyers seem to be waiting until their orders are placed by consumers and good weather has caused every one in the country districts to be busy in the fields. Prices are not materially changed.

The Baltimore sash, door and blind trade leaves something to be desired, both in point of volume and with regard to prices. Because of the check-up in building here, the efforts to get orders have been intensified and the resultant competition has not been conducive to the maintenance of remunerative values. A slightly better feeling has set in of late, a considerable number of building projects being developed, but the situation is not yet entirely pleasing. The prices that obtain are relatively low and the factories are not as busy as they could be without pushing operations. The season has been in the main one of hope deferred, though the prospects seem to be more promising.

The door mills at Buffalo, N. Y., have been getting a little larger run of business during the last two weeks and building operations are on a satisfactory scale for the season, especially in the city and surrounding towns. There has been a large growth in manufacturing enterprises in one or two of the nearby towns during the last year. Competition from outside mills is keen on doors and a good deal of business is being taken at low prices by western concerns.

Cincinnati planing mills continue active on special work and have much more in sight, probably enough to keep running right up to cold weather. This is due to the unusually heavy demand for high-class homes. Demand for stock sizes is rapidly on the increase. Dealers are not getting the best prices right now, due to the competition for what work there is, but they should do better in price as demand increases.

The leading sash and door factories in St. Louis are fairly well supplied with orders, coming in from local sources as well as from outside buyers. Everything tends to the belief that the mills will have about all they can attend to within a short time. Building operations are looking up. Several large buildings are being contemplated and the plans of many more are in the hands of architects. For this reason it is thought that within a short time the orders for planing-mill work will be placed freely.

Trade at Kansas City continued last week much as it did the week preceding. Dealers find the volume of business satisfactory, especially from the country and city demand is fully up to expectations, although not so good as might be wished. In Kansas and Oklahoma prices have not been changed, but there have been some slight readjustments in Arkansas and Missouri to meet local conditions. In Arkansas there was a slight increase in the new cards, while in Missouri a slight recession was noted, owing to the decreases made by northern manufacturers who sell stock in that territory. The decrease, it is expected, will be of short duration, especially so far as glazed sash is concerned, as the price of glass continues very stiff.

Sash and door manufacturers of the Tacoma (Wash.) district report a quiet market with orders still limited and prices not what it is felt they ought to be. Outputs of the larger plants have for some time been restricted and are continuing that way. Fir doors and fir veneer panels are constantly being pushed into new territory and manufacturers are working hard to create new markets. Column business is not very strong, but most of the factories have orders ahead for a few weeks yet. Box trade is very slack.

Door manufacturing is progressing steadily with the plants at San Francisco. Raw material is to be had at more reasonable prices, especially fir. The big white pine door plants at Weed and Sonora are turning out great numbers of doors for the eastern market, but are not operating up to their full capacity. There has been an increase in the production of redwood doors during the year.

The window glass situation is sized up by the Pittsburgh Plate Glass Company's expert as follows:

There was an improvement in the demand for window glass during September and with the result that stocks held by the manufacturers have been still further reduced, so that at the present time they are holding less glass than has been the case for several years. The production at the machine-operated plants remains very light, and no glass was made at the hand-operated factories during the month.

The condition above mentioned has been reflected in the jobbing centers, where higher prices are generally prevailing in keeping with the increase in demand which is reducing the amount of glass held by the jobbers. It is generally conceded that there will be no general resumption of operations at the factories until late October or early November, and probably at some increase in cost of manufacture. The amount of glass that is obtainable for the fall trade is none too great, and will probably show some shortage in the more popular sizes and qualities. Both manufacturers and jobbers are scanning orders carefully with a view to conserving their stocks of the most desirable specifications. • • •

With conditions as they have been for the last few months, the trade has been and is still buying for current requirements, and with stocks below normal. Indications point to an active demand during October, and probably at higher discounts than those which are prevailing at present.

STIRRING UP INTEREST.

SHREVEPORT, LA., Sept. 29.—J. M. LaGrone, manager of the Louisiana Creosoting Company, of Winnfield, is stirring up interest in the question of creosoted wood blocks for bridge and street paving. The company has contracted for creosoted timbers and blocks for the flooring of the bridge over Ouachita River at Monroe, and recently Manager LaGrone was in Alexandria with a view to interest the Alexandria Traffic Bridge Company into using similar material for the bridge over the Red River, which is the kind of material that has been chosen for a new bridge over the Red at Shreveport. Alexandria authorities have been asked to consider wood blocks for some of the street paving that was recently authorized by a public improvement bond issue, though as yet decision has not been reached. Some of the blocks have been used for repairing brick streets there and reports are to the effect that they are wearing well.

Saw Mills For Sale

At the close of the present sawing season we will be prepared to offer two (2) complete saw mill plants, including planing mill equipment and everything necessary for entire operation.

One plant has saw mill equipment consisting of three (3) 8' Band Mills, one 42" Gang and one 6' Slab Resaw, together with Lath and Picket Mill machinery and a steam plant of 1,000 H. P.

The other plant consists of two (2) 8' Band Mills, two (2) Slab Resaws, Lath and Picket Mill machinery and ample steam power for the operation of same.

These plants can be seen in operation and we invite correspondence from prospective mill builders.

For further particulars, address,

White River Lumber Co.

MASON, WISCONSIN.

FORTY YEARS AGO

The Lumber Business Was In Its Infancy—So was this Association.

The Lumber Trade Has Taken Wonderful Strides — We Have Kept Apace.

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IMPORTANCE OF LUMBER AND ALLIED INDUSTRIES.

Bulletin Issued by Bureau of Labor Statistics Shows Wages and Hours of Labor — Covers Important Occupations in Lumber Manufacturing.

[By Odell.]

The Bureau of Labor Statistics has just issued bulletin No. 129 showing the wages and hours of labor in the lumber, millwork and furniture industries of the United States from 1890 to 1912 inclusive. The importance of these industries is indicated by the fact that they employed, according to the Census of 1910, respectively, 550,000, 115,000 and 125,000 persons.

The information, in regard to lumber manufacturing, covers the ten most important occupations in the industry: doggers, edgermen, laborers, planer feeders, band, circular and gang sawyers, resawyers, setters and trimmer operators, which cover more than three-fifths of the total employees.

Comparing 1912 with other years, the changes in nominal full time hours per week and rates of wages per hour, as shown by combining the principal occupations, were as follows:

	Changes hours per week Percent decline.	*Changes rates per hour. Percent advance.*
1912 compared with 1890...	3.8	29.0
1912 compared with 1895...	3.3	35.6
1912 compared with 1900...	2.9	24.8
1912 compared with 1905...	1.0	13.1
1912 compared with 1910...	.1	1.2

Rates of wages per hour declined 8.4 percent following 1907 and not until 1910 did they again reach the level of 1907. The decline was greatest for laborers, whose rates of wages an hour were 8.9 percent lower in 1908 than in 1907.

In explaining the scope and method of the compilation, the bulletin says:

The industry covered in this report is the manufacture of lumber, including planing and kiln-drying when carried on directly in connection with the sawmill. During the earlier years of the twenty-three-year period covered by this report, employees planing lumber in a few establishments engaged in planing lumber in connection with lumber mills were included in the "planing-mill products" or "millwork" industry; but during the later years of the period the Bureau has included such establishments under lumber manufacturing, as the planing is in most cases done immediately following and in connection with the sawing of lumber, and is therefore quite properly considered a part of the lumber industry.

In selecting establishments from which to secure data the Bureau undertook to represent all States in which lumber manufacturing is of material importance, the measure of importance being the number of employees as reported by the United States census of manufactures in 1905. In selecting establishments in 1912, every State having 7,000 or more employees in the industry is represented.

The census figures for 1910 were not available at the time the work for 1911 and 1912 was planned, and therefore the establishments selected, as already stated, were distributed by States according to the census of 1905. The relative importance of the various States, as measured by the number of employees in this industry, changed materially during the five years from 1905 to 1910; thus Louisiana was first in 1910 and fourth in 1905, Mississippi was third in 1910 and sixth in 1905, North Carolina was fifth in 1910 and twelfth in 1905, Virginia was sixth in 1910 and fifteenth in 1905, and Wisconsin was eighth in 1910 and first in 1905.

TOTAL NUMBER OF EMPLOYEES IN LUMBER MANUFACTURING AND NUMBER OF EMPLOYEES IN ESTABLISHMENTS FROM WHICH DATA WERE SECURED IN 1912.

State.	*Number of employees reported by United States census.* 1910.	1905.	*Establishments furnishing information to the Bureau of Labor Statistics in 1912.* Number of establishments.	*Number of employees—* On payroll.	*For whom data were secured.*
Wisconsin	25,445	28,118	24	3,179	2,302
Washington	41,684	28,023	19	4,435	2,300
Michigan	27,325	27,460	25	3,044	2,188
Louisiana	43,996	26,353	21	5,270	2,848
Arkansas	31,404	22,298	19	5,035	2,576
Mississippi	32,106	21,233	15	3,440	1,894
Minnesota	16,650	17,213	8	2,325	1,583
Pennsylvania	15,707	16,674	14	1,205	768
Georgia	18,110	15,364	16	1,663	1,199
Tennessee	19,233	14,900	27	1,762	1,109
Alabama	20,949	14,682	13	2,502	1,568
North Carolina	30,534	14,491	17	2,265	1,527
Texas	21,519	13,332	12	3,080	1,640
California	15,614	13,181	14	2,343	1,518
Virginia	29,758	12,190	11	1,505	929
Maine	13,203	12,028	10	957	628
West Virginia	17,629	10,460	16	1,670	927
Florida	17,842	10,408	9	1,744	1,137
South Carolina	13,586	9,656	7	1,508	971
Oregon	13,460	7,284	4	890	577
Other States*	81,424	69,278	...	.....	.....
United States	547,178	404,626	301	49,822	30,189

* Includes States having less than 11,000 each in 1910 and less than 10,000 each in 1905.

According to both the census of 1905 and the census of 1910 more than 80 percent of the total number of employees in the industry are found in the 20 States in which the establishments furnishing information to the Bureau of Labor Statistics are located.

The number of employees in the establishments from which the bureau secured 1912 data was equal to 9.1 percent of the total in the industry in 1910, and the number for which the bureau secured detailed information in 1912 was equal to 5.6 percent of the total in the industry in 1910.

All information included in this report was secured from pay rolls of the various establishments by agents of the Bureau of Labor Statistics.

As treated in this report the lumber industry begins with the work of the log pond and ends with the delivery of the finished product to the carrier for shipment. During the earlier years of the twenty-three-year period during which these statistics have been compiled choppers and sawyers employed in cutting timber in the woods were also included, but the authors of the bulletin do not state why this class of lumber employees has been left out in recent years.

The following table summarizes the data concerning rates of wages secured from the whole number of establishments furnishing information. For each of the principal occupations, as previously mentioned, data are shown as far as available for each of the six years, 1907 to 1912. Data for this table are presented for identical establishments in such a way as to make possible comparisons from year to year.

CLASSIFIED RATES OF WAGES PER HOUR IN THE UNITED STATES, BY YEARS, 1907 TO 1912.

[Under each occupation the establishments set opposite each group of years are identical.]

Occupation, sex, and No. of establishments.	*Year*	*Number of employees.*	*Average nominal full-time hrs. per week*	*Average rate of wages per hour.*
Carriage men, male—				
41 establishments,	1907	208	60.7	$0.2184
	1908	201	60.8	.2074
	1909	195	60.8	.2115
	1910	215	60.7	.2196
245 establishments,	1910	1,327	61.4	.2088
	1911	1,298	61.3	.2119
Doggers, male—				
273 establishments,	1911	852	61.4	.1791
	1912	869	61.3	.1803
Edgermen, male—				
41 establishments,	1907	79	60.7	.2535
	1908	78	60.7	.2457
	1909	77	60.7	.2481
	1910	84	60.7	.2647
245 establishments,	1910	585	61.2	.2553
	1911	569	61.2	.2589
299 establishments,	1911	684	61.3	.2599
	1912	686	61.2	.2601
Laborers, male—				
41 establishments,	1907	4,097	60.5	.1827
	1908	3,662	60.6	.1665
	1909	3,910	60.5	.1708
	1910	4,582	60.5	.1832
245 establishments,	1910	20,327	61.3	.1660
	1911	19,256	61.3	.1655
299 establishments,	1911	26,784	61.4	.1621
	1912	25,506	61.5	.1641
Planer feeders, male—				
178 establishments,	1911	1,156	61.3	.1792
	1912	1,165	61.1	.1849
Sawyers, band, male—				
34 establishments,	1907	71	60.8	.4901
	1908	69	60.8	.4807
	1909	69	60.8	.4894
	1910	73	60.7	.5007
203 establishments,	1910	430	61.1	.5441
	1911	433	61.0	.5545
243 establishments,	1911	509	61.1	.5511
	1912	493	61.1	.5523
Sawyers, circular, male—				
12 establishments,	1907	14	61.3	.5448
	1908	14	61.3	.5186
	1909	13	61.3	.5254
	1910	14	61.3	.5501
58 establishments,	1910	81	61.9	.4964
	1911	78	62.0	.4976
72 establishments,	1911	95	62.5	.5036
	1912	94	62.5	.5091
Sawyers, gang, male—				
5 establishments,	1907	6	60.0	.2708
	1908	6	60.0	.2558
	1909	6	60.0	.2583
	1910	6	60.0	.2642
52 establishments,	1910	64	61.4	.3092
	1911	60	61.6	.3006
66 establishments,	1911	74	61.6	.3061
	1912	75	61.6	.3058
Sawyer, resaw, male—				
98 establishments,	1911	149	60.7	.2515
	1912	147	60.7	.2556
Setters, male—				
301 establishments,	1911	714	61.3	.2506
	1912	713	61.2	.2518
Trimmer operators, male—				
37 establishments,	1907	72	60.7	.2070
	1908	68	60.7	.1959
	1909	72	60.7	.1971
	1910	74	60.7	.1969
228 establishments,	1910	503	61.0	.2089
	1911	485	61.0	.2113
294 establishments,	1911	479	61.3	.2092
	1912	441	61.3	.2104

The bulletin also gives the information contained in the above tables of wages and working hours in great detail divided among the various States and for each class of employee dealt with in the compilation.

Millwork.

In millwork, the bureau's report covers the three most important occupations, bench and machine hands and laborers, covering more than five-eights of the total employees. In 1912 the nominal full-time hour a week for the combined occupations had fallen five percent as compared with 1890; 2.7 percent as compared with 1900, as was practically the same as 1910. As compared with the average for the 10-year period, 1890-1899, a decline of 3.8 percent was found.

The rates of wages per hour in the same occupations in the millwork industry had, in 1912, advanced 33.4 percent above the rates in 1890, 24.9 percent above those of 1900, and 3.5 percent above those of 1910. The

increase above the average of the ten year period, 1890-1899 was 32.3 percent. In this industry the advance during the six year period, 1907-1912, was almost continuous, the decline in 1908 being less than 1 percent.

The following table is self-explanatory:

TOTAL NUMBER OF EMPLOYEES IN THE MILLWORK INDUSTRY AND NUMBER OF EMPLOYEES IN ESTABLISHMENTS FROM WHICH DATA WERE SECURED IN 1912.

State.	Number of employees reported by United States Census Office.* 1910.	1905.	Establishments furnishing information to the Bureau of Labor Statistics in 1912. Number of establishments.	Number of employees—On pay-roll.	For whom data were secured.
New York	15,126	14,456	41	2,887	1,880
Pennsylvania	9,267	9,050	68	2,603	1,726
Illinois	8,710	6,994	31	2,346	1,453
Ohio	5,846	5,805	33	1,417	1,003
Michigan	6,793	5,225	16	927	654
California	6,341	4,753	17	1,818	1,145
Wisconsin	6,673	4,727	15	4,429	2,657
Georgia	3,410	3,603	11	1,149	780
Massachusetts	3,296	2,970	15	735	532
Minnesota	3,154	2,858	9	951	598
Iowa	3,440	2,582	13	1,710	895
Other States†	40,336	34,651	...	.....	.....
Total	112,392	97,674	269	20,972	13,323

* The designation used by the United States Census is "Lumber, Planing Mill Products," including Sash, Doors, and Blinds.

† Includes States having less than 3,000 each in 1910 and less than 2,500 each in 1905.

The following explanation of the industry is given in the bulletin:

This industry as used in this report includes establishments engaged in the manufacture of sash, doors, blinds, window frames, door frames, moldings, stair material, newels, mantels, store fixtures, and all kinds of builders' trim or finish.

A large number of the establishments are comparatively small and confine their operations wholly to custom work. Many of them are operated in connection with a retail lumber business. Some are run by contractors who carry on large building operations, and manufacture trim, mostly for their own use. Some custom mills in the larger cities are quite extensive and employ a large number of workmen.

A few establishments manufacture for the general market. Such establishments, as a rule, employ a larger number of workmen than the custom mills or factories, have their work more systematized, and pay somewhat lower wages. The latter may be accounted for by the greater division of labor whereby an employee, while being expert in the operation of a particular machine or in performing certain light work, is not a skilled workman generally, and so can not command as high wages as an all-round skilled mechanic.

There is hardly such a thing as a typical factory in this industry in the sense that there is a typical sawmill or cotton factory. The work may be done on the second floor of a small building, the power being rented with the room; or the factory may consist of one or more large buildings with so much machinery that a considerable force of machinists will be regularly employed to keep the machines in order. Neither is there any regular or established ratio between the number of employees in different occupations.

CLASSIFIED RATES OF WAGES PER HOUR IN THE UNITED STATES, BY YEARS, 1907 TO 1912.

[Under each occupation the establishments set opposite each group of years are identical.]

Occupation, sex, and No. of establishments.	Year.	Number of employees.	Average nominal full-time hrs. per week.	Average rate of wages per hour.
Bench hands, male—				
62 establishments,	1907	1,076	55.6	$0.2976
	1908	945	55.6	.2945
	1909	1,041	55.7	.2944
	1910	1,083	55.5	.3047
226 establishments,	1910	3,695	55.1	.3072
	1911	3,553	55.2	.3085
267 establishments,	1911	4,131	55.1	.3096
	1912	4,148	54.8	.3131
Laborers, male—				
60 establishments,	1907	1,578	58.5	.1555
	1908	1,300	58.2	.1550
	1909	1,451	58.0	.1589
	1910	1,522	58.3	.1613
224 establishments,	1910	4,885	57.6	.1705
	1911	4,764	57.6	.1712
253 establishments,	1911	4,456	57.6	.1722
	1912	4,121	57.4	.1781
Machine hands, male—				
62 establishments,	1907	1,508	56.9	.2527
	1908	1,372	57.1	.2494
	1909	1,488	57.2	.2514
	1910	1,580	57.3	.2570
232 establishments,	1910	5,438	57.0	.2551
	1911	5,363	56.8	.2596
268 establishments,	1911	5,615	56.7	.2625
	1912	5,054	56.2	.2704

With regard to this industry also, the bulletin gives statistics in great detail concerning the wages and hours of employment by States, and divided among the various classes of employees dealt with.

RAILWAY ASSOCIATION FIGURES ON CAR MOVEMENT.

Lumbermen will be interested in some figures issued recently by the American Railway Association, which gives the average number of miles a day that freight is moved by ten different carriers. A perusal of this report will easily show how slowly freight moves from shipping point to destination, when it is shown that the average movement a day is but a few miles. The figures cover a period of five months—from January to May inclusive of the present year, and are statistics relative to the movement of freight for the following railroads:

Chicago, Indianapolis & Louisville; Cincinnati, Hamilton & Dayton; Grand Rapids & Indiana; New York, Chicago & St. Louis; Pennsylvania Company; Pere Marquette; Toledo, St. Louis & Western; Vandalia; Wabash; Wheeling & Lake Erie.

The following table includes the total freight car mileage, average mileage per car per day, and the percentage of loaded mileage for each of the five months mentioned:

	Total freight car mileage.	Daily ave. mileage per car.	Percent loaded mileage.
January	148,106,516	24.1	69.2
February	133,131,313	24.3	71.3
March	126,846,315	20.7	71.6
April	127,998,931	21.6	73.7
May	151,176,004	23.1	70.3

The average for the five months' period is shown in the following table:

Roads—	Total freight car mileage.	Daily ave. mileage per car.	Percent loaded mileage.
Chicago, Indianapolis & Louisville	3,730,404	18.3	71.6
Cincinnati, Hamilton & Dayton	5,037,541	13.2	74.3
Grand Rapids & Indiana	2,758,810	19.1	70.0
New York, Chicago & St. Louis	13,239,347	37.6	73.3
Pennsylvania Company	62,422,943	21.0	70.4
Pere Marquette	11,753,285	17.2	76.6
Toledo, St. Louis & Western	4,495,764	40.4	75.3
Vandalia	6,592,381	16.6	67.9
Wabash	22,988,628	26.6	69.9
Wheeling & Lake Erie	4,430,507	15.9	63.3
Total	137,449,610	22.5	71.2

An analysis of these figures shows that the smallest average of any of the roads for moving a freight car a day in the five months period was the Cincinnati, Hamilton & Dayton, the average being 13.2 miles. The best record in the same period is credited to the Toledo, St. Louis & Western Railroad (Clover Leaf), with an average of 40.4 miles a day. The New York, Chicago & St. Louis Railroad (Nickel Plate), which is one of the heavy freight traffic roads of the country, has the second best average in car movement a day, with 37.6 miles. The five months daily car movement average for the Pennsylvania Company is given as 21 miles, and the Wabash having a still better showing of 26.6 miles. Of the roads mentioned, the Pennsylvania Company in the five months average has the largest total freight car mileage, with 62,422,943 miles. The nearest competitor to the Pennsylvania in this respect is the Wabash, with 22,988,628 miles.

As the average mileage per car per day figures include both loaded and unloaded cars, the percent loaded mileage figures are also of interest. In this respect the Pere Marquette leads with its average percent of loaded mileage for the five months as 76.6 percent; the Toledo, St. Louis & Western is a close second with 75.3 percent. The third best average is credited to the Cincinnati, Hamilton & Dayton with 74.3 percent. The New York, Chicago & St. Louis Railroad has an average of 73.3 percent, and the Chicago, Indianapolis & Louisville 71.6 percent. The Grand Rapids & Indiana in this respect has a percentage of 70 and the other roads mentioned are below the 70 percentage figure.

In glancing over these figures the question which will more likely occur to lumber dealers is why one railroad is able to have an average per day car movement of more than 40 miles, while another railroad falls down to an average of 13.2 miles; some of the other lines not having a much better showing. Inasmuch as these averages include all freight movements, another question that will readily occur to lumbermen is what is the daily average car movement for lumber, when the railroads are so slow handling lumber shipments and rush other freight on to points of destination.

AMONG THE SALESMEN

F. W. Knight, who is well known in the sash and door trade of New York State, is now representing the Roach & Musser Company, Muscatine, Iowa, with headquarters in Buffalo.

A. K. Martin, who retired as eastern representative of the Douglas Fir Sales Company last month, has notified friends that he is now manager of the Covington Lumber Company, Kent, Wash.

W. D. Richardson, who has been eastern representative of the McGoldrick Lumber Company until recently, has joined the forces of the International Lumber Company and will sell in central Iowa the product of the mill at International Falls and Spooner, Minn.

H. H. Shepeck, representing the I. Stephenson Company, Wells, Mich., was in Minneapolis last week concluding a three months' tour of the Middle West and Northwest, and reported a very light trade in the drought stricken sections, but a very satisfactory demand for white cedar products.

William Catlin, who has been connected with the Humbird Lumber Company, Sandpoint, Idaho, as sales manager for a number of years, has announced that he will resign the first of the year. Mr. Wolf, assistant sales manager, has also severed his connection with the company and will return to Pittsburgh, Pa. He was formerly connected with the Allegheny Lumber Company in Pennsylvania.

Ellis K. Guilford, of the sales force of Wistar, Underhill & Nixon, Philadelphia, Pa., is in the Johns Hopkins Hospital, in Baltimore, gradually recovering from a nervous breakdown. The attack was probably caused by a shock from lightning that struck a railroad where he was walking, knocking a steel-handled umbrella from his hand and dazing him. At first he fought against the case of "nerves" that the shock had left him, but he was finally prostrated. He is recovering and hopes to be back at work in a few weeks.

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You know the loss you have sustained thru breakage. It's a great loss of good dollars.

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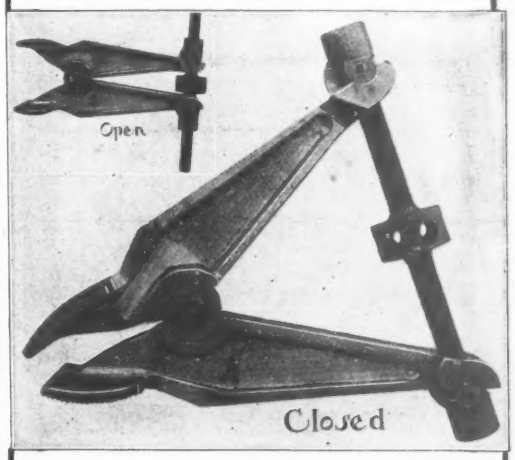

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Lumbermen AND Woodsmen Save Money by wearing Ruthstein

Steel Shoes

But durability is only one of their many advantages. They protect health of men engaged in outdoor work in that they keep the feet warm and dry without heating or sweating them. You can work in water, mud or snow without danger of colds, stiffness, rheumatism and other troubles due to cold or sweaty feet.

One Piece of Steel forms sole from toe to heel (extending one inch above sole all around) giving you a shoe that will withstand the hardest knocks and practically wear forever. The extra protection on the toe absolutely defies wear.

Sole is provided with adjustable steel rivets which protect it from wear as well as giving wearer firm foothold on ice, logs or slippery places. Rivets when worn can be replaced with new ones in a few minutes.

The uppers of Ruthstein Steels are made of the best grade of leather ever put into working shoes. Soft, pliable, *waterproof* leather, with just enough "give and take" to feel easy, and enough firmness to give proper support.

The uppers are *reinforced* at the seams and *riveted to the steel.*

One Pair Outwears Five Pairs

of ordinary shoes, but the price is no more than you'd pay for one pair of leather shoes. Can you beat it? Wear "Steels" and stop the drain of your pocket book. We make them in sizes 5 to 12—6, 9, 12 and 16" high. Send today for booklet—free—describing these "steel shoe wonders" that are saving millions of dollars yearly for the men who labor out-of-doors.

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Toronto, Ont., Can. Northampton, Eng.

Big Money: Commissaries and Agents can make big money handling Steel Shoes. Write for special proposition.

PACIFIC COAST

DOOR BUYERS APPROVE
OUR SOFT YELLOW
OK FIR DOORS

Because they possess natural characteristics in grain and color that are not often excelled even in the higher priced veneered doors—and the difference in price means larger business and more profits. They stand on their own merits.

We also manufacture Frames, Mouldings, Finish, Siding, Columns—in fact pretty much everything a yard carries in stock.

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OUR SPECIALTY 3 GRADES IN 1 THICKNESS 5 to 2 In.
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Special Upright Red Cedar Shingles
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Our Own Special Grading Rules.
EXTRA CLEARS (Strictly clear, 4 inches and wider).
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We also manufacture FIR LUMBER of every description.

NECROLOGICAL RECORD OF THE WEEK

William A. Doherty.

SEATTLE, WASH., Sept. 29.—William A. Doherty, known to the older lumbermen from the Great Lakes to the Pacific coast, passed away at his home here from a sudden attack of heart trouble September 22, at the age of 66 years. He is survived by a widow and two nephews.

W. A. Doherty was born at St. Johns, New Brunswick, in 1847. In 1880 he went to Hamlin, near Ludington, Mich., and for several years worked in a sawmill. Then he went to Grand Haven, and later to Muskegon and was interested in lumber manufacturing operations there. Going to Menominee, Mich., he engaged in the mill business, the firm name being Doherty & Barrs. He later had charge of the Diamond Match Company's operations at Ontonagon, Mich., for several years, but in 1891 went to Ashland and engaged in the sawmill business for himself, the concern being known as the Doherty Lumber Company. This plant burned in

THE LATE WILLIAM A. DOHERTY.

1894 and Mr. Doherty again became connected with the Diamond Match Company, leasing its mill at Green Bay, Wis., and sawing lumber for it by the thousand. In 1900 he came to Seattle and was for several years connected with manufacturing operations, being manager of the Northern Lumber Company at Everett, Wash., but for several years he had been handling timberlands with offices in this city.

Mr. Doherty was a thirty-second degree Mason and a Noble of the Mystic Shrine, and the Consistory of the Scottish Rite Masons will have charge of the funeral services Thursday. He was generous and noble hearted and made friends everywhere who will learn with sorrow of his sudden taking away.

Ben Collins, Jr.

The death of Ben Collins, jr., president of the Collins Lumber Company, Chicago, came as a great shock to his numerous friends in the lumber business and elsewhere. He died, after a short illness of diabetes, at his residence, 5304 Cornell Avenue, Monday, September 27.

Mr. Collins was born in Covington, Ky., June 15, 1873. He remained there with his parents until he was 10 years old, when they moved to Texarkana, Ark. He finished his schooling in Texarkana. On the death of his mother, who died while Ben was still a lad, his uncle, Ben Collins of Arkansas, looked after him. His experience in the lumber business began in 1889 at Genoa, Ark., where he worked for E. W. Frost & Co. He began at the bottom and step by step mastered all the hard details necessary to be mastered in order to win such a rank in the lumber world as Mr. Collins

THE LATE BEN COLLINS, JR.

held. From Genoa, Ark., he went to Texarkana and worked for some time for the Gate City Lumber Company. His next experience was with the East Texas Lumber Mills, and in 1894 he went on the road, traveling in Ohio and Indiana. He continued with this company until 1896, when he joined the forces of the Big Four Lumber Company, of St. Louis, remaining a year, when he formed a partnership with J. W. Ferguson, of Texarkana, the firm being known as Ferguson & Collins, located at Cleveland, Ohio. Upon the dissolution of this partnership young Collins became connected with the Frost-Trigg Lumber Company, of St. Louis.

From 1898 to 1900 Mr. Collins was with the Monarch Lumber Company, of St. Louis, traveling in Nebraska and Kansas, opening an office later for the company in Indianapolis. Later he was associated with the St. Louis Refrigerator & Wooden Gutter Company, and in 1901 took charge of the sales department of the Mercantile Lumber & Supply Company, of Kansas City, Mo.

In May, 1907, Mr. Collins opened offices in Chicago for the Continental Lumber Company, of Houston, Tex., being elected vice president and general manager. On leaving this company he organized the Collins Lumber Company.

Mr. Collins was one of the leading golfers of Chicago, being a member of the Midlothian Club. He was also a member of the South Shore, Union League, Lumbermen's and Chicago Yacht Clubs and was a Knight Templar. He is survived by Mrs. Collins. Funeral services were held at his late residence Wednesday afternoon and the remains taken to Covington, Ky., for burial.

William B. Millard.

NEW YORK, Sept. 30.—Several lumbermen from this market attended the funeral of William B. Millard, president of the Millard Lumber Company, which took place at New Hamburg, N. Y., last Tuesday. Mr. Millard was very well known in this market and was a large factor about fifteen years ago, some years shipping as high as 80,000,000 feet a year. He was one of the prime movers in the organization of the National Wholesale Lumber Dealers' Association; in fact, all of the early meetings during the formation of the association were held in Mr. Millard's office, and largely through his efforts the early policies of the association were outlined and the plans developed that eventually resulted in the organization as it exists today. For some time Mr. Millard was trustee and treasurer of the association and in its earlier history he took a very active part in committee and other organization work. President N. H. Walcott has appointed William A. Cromble, chairman, and Frederick W. Cole and Robert W. Higbie a committee to represent the association to draft resolutions on the death of Mr. Millard. Among those who attended the funeral were E. F. Perry, secretary of the National Wholesale Lumber Dealers' Association; William A. Eaton, E. R. Randall and N. L. Burdick.

Isaac Dunfield Harbert.

PHILADELPHIA, PA., Sept. 30.—Isaac Dunfield Harbert, for many years one of the prominent figures in the old Philadelphia lumber concern, Harbert, Russell & Co., but for several years retired from the lumber business, died last week at his home, 2039 Upland Avenue, Overbrook. He was 75 years of age and his death was caused by an attack of pneumonia. He was a native of Philadelphia, and in 1870 married Miss Anna Kirkbride, who survives, with one son, Charles, and two daughters, Anna and Mary Kirkbride.

Wesley Pavey.

FISHER, ARK., Sept. 30.—Wesley Pavey, of Pavey & Vowell, operating a hickory mill here, was struck by a large piece of timber while working over a machine and died later in a Honesboro hospital. The remains were taken to Charleston, Mo., for burial. Mr. Pavey is survived by a widow and two children.

James W. Wheeler.

INDIANAPOLIS, IND., Oct. 1.—An illness of about three weeks terminated in the death at Noblesville September 29 of James W. Wheeler, one of the best known lumbermen in Indiana. Mr. Wheeler was born February 27, 1843, and was a self-made man. During the Civil War he served with Company B, One Hundred and Thirty-sixth Indiana Volunteer Infantry, and was honorably discharged at the close of the war. About twenty years ago he began investing heavily in Arkansas and Tennessee timber and lumber interests and was also interested in the lumber business in his home city. He is survived by eight children: C. L. Wheeler, of Memphis, Tenn.; A. G. Wheeler, of Benton, Ark., both engaged in the lumber business; Leonard Wheeler, Memphis; Mrs. Harvey Laudig, Cleveland, Ohio; Mrs. Elden Robb, Greenfield, Ind.; Mrs. David Jump, Tacoma, Wash.; Mrs. Samuel Hooke, Wanatah, Ind., and Miss Caroline Wheeler, of Noblesville.

James Brizzolara.

FORT SMITH, ARK., Oct. 1.—James Brizzolara, for years one of the most prominent attorneys in Arkansas, and a leader in Hoo-Hoo circles, died at his home here following a prolonged illness. The deceased was attorney for a number of lumber companies and was a stockholder in many of the pioneer mills of this section. He was a prominent citizen, having served as assistant United States district attorney and post master. He was elected mayor of Fort Smith several times, even though the town was overwhelmingly Republican.

David J. Ranson.

SAULT STE. MARIE, MICH., Oct. 1.—David J. Ranson, 73 years old, a resident of this city for forty-two years, died at his home here last week, after a short illness caused by heart failure. Mr. Ranson was born in Perth, Ont., and came to this city in 1871. He was interested in a number of pioneer business corporations in this city. For twenty-five years he was employed by the John Spry Lumber Company, of Chicago, timberland dealer. He was regarded as one of the best timber cruisers in Michigan and was known to have knowledge of timberlands in the upper peninsula which no other man possessed. He was married twice and of the first union a son, William, of this city, survives. Five children were born of the second union, of which four daughters besides the widow survive. Funeral services were held under the auspices of the Knights of Columbus.

Charles E. Snell.

POTSDAM, N. Y., Oct. 1.—Charles E. Snell, a prominent lumberman of this city, died recently. Mr. Snell entered the lumber business in northern New York when softwood lumbering was at its hight. He was born in Vermont and came to this part of the State when a boy and lived the greater part of his life in Potsdam. For some time, however, he had been in ill health and had not given his attention to business. At the outbreak of the Civil War he enlisted in the Fourteenth New York Cavalry, which retired him at the front with honor. Besides his widow he is survived by two sons, O. A. Snell, of Watertown, and I. A. Snell, of Potsdam, and one daughter, Mrs. E. W. Hitchcock, of Hannawa Falls.

Charles H. Nugent.

BROOKLYN, N. Y., Oct. 1.—Charles H. Nugent, 29 years old, of the Hardy-Voorhees Lumber Company of this city, died September 22. He is survived by his parents, five brothers and one sister.

George Miner.

LOS ANGELES, CAL., Oct. 1.—George Miner, 45 years old, foreman for the E. K. Wood Lumber Company, died September 11. The funeral services were in charge of the Odd Fellows.

J. M. Lawson.

ROYAL OAK., MICH., Oct. 1.—J. M. Lawson, 58 years old, a well-known lumber dealer and banker of this city, died September 18. He is survived by his widow and five children.

THE EMPIRE STATE

FROM THE METROPOLITAN DISTRICT.

Improved Tone to Inquiry—Yard Stocks Poorly Assorted—Railroads Buying Moderately—Export Business Dull—Building Situation.

NEW YORK, Sept. 30.—The lumber business continues on a very irregular basis, but as a rule the situation is more encouraging than it has been at any other time during the month passing. Inquiries begin to come along on a better basis and yards feel that the time has arrived when they must take advantage of the low prices prevailing. All have been carrying as low stocks as possible, and while building has continued unusually dull there has been a moderate demand and the slow buying has placed the yards in position where they now badly need certain assortments.

Doubtless during this fall a great deal of lumber must be bought to place the yards in proper shape, although this applies more especially to the smaller yards, larger yards having bought pretty fairly during the summer and up to within the last month. Taking the aggregate of business since the first of January, many wholesalers find upon looking over their books that the volume has been much larger than it was last year, but the margin of profit has been considerably less. Stocks have been pretty well offered at mill points and for wholesalers who bought ahead for any period to realize as they anticipated has been difficult. Their stocks have been moved, but to hold up prices has been hard and the yards have been getting the benefit. Most of the stocks coming in this way have been consumed and the approach of winter places both branches of the trade in position where they feel business will be on an upward swing, although the improvement is bound to be very slow.

Railroads are buying some lumber, but the volume of business from that source is considerably less than it was last year. Many purchases were made during the spring and the railroads put the stocks into pile, as the projects for which the material was intended were never started. This has accounted for a large part of the dullness among railroad circles at this time, but inquiries are beginning to show signs of improvement. The Central Railroad of New Jersey is building a large terminal at its Jersey City yards and a large quantity of lumber is consumed in the concrete work. This is about the largest piece of railroad work under way in this market, and a great deal more lumber will be required before operations are completed. A decrease of over 18,000 idle cars is reported in the surplus for the last two weeks and this is causing much encouragement to those who are looking for signs of general betterment.

E. H. Lemay, of Montreal, Canada, was here several days visiting his selling agents, W. M. Crombie & Co., 81 New Street. Both Messrs. Lemay and Crombie report a good run of orders and say that inquiries for both the home and foreign demand have held up unusually well, although competition has been keen and prices have not maintained their former level.

Wholesalers doing an export business complain that it has been a long while since the buying from abroad was as dull. There is a limited inquiry for lumber boats for South American and West India business but as a rule tonnage is offered with less freedom for early delivery and rates are easy.

Lumbermen are much interested in the announcement made by the State engineer's office that construction will shortly be begun on the barge canal terminal at the junction of Newton Creek and the East River. This statement was made to representatives of the Greenpoint Board of Trade. The purpose is to permit use of this terminal for general shipping until the barge canal is completed in 1915. It will bring to the lumber yards of Newton Creek a large section of upstate traffic and place Brooklyn yards in position where they will be in position to handle their shipments on a more expeditious basis than they can at the present time.

Building prospects are somewhat better than last week as shown by the figures filed in the Building Department. In Manhattan twelve permits for new buildings were issued last week, to cost $3,806,400, compared with thirteen permits and $1,205,550 for the corresponding week of last year; in the Bronx six permits, to cost $73,350, as compared with twenty-seven last year, to cost $648,300; Brooklyn seventy-four permits and $393,340, as compared with 108, to cost $481,450; Queens, 102 permits, $427,325, as compared with ninety-one and $410,080; Richmond, ten and $15,400, as compared with eighteen to cost $127,695.

THE TONAWANDAS.

NORTH TONAWANDA, N. Y., Sept. 30.—Local canal officials announce that the Erie Canal is to be kept open as long as the weather will permit this season. The lengthening of the season at this time is due to the extensive delay experienced in opening the canal last spring, due to breaks.

The month just closed was one of the most active of the season in the amount of lumber forwarded from the Tonawandas over the Erie Canal, a total of 13,336,133 feet being shipped, as against 8,600,000 feet for September of last season. Of the last month's shipments 4,610,000 feet went to Albany, New York and other tidewater points.

The Kelsey Hardwood Lumber Company will bring forward only two more cargoes. The steamer *Wotan* is due this week with one of the cargoes, consisting mostly of maple.

The Northern Lumber Company has only one more cargo to come down the lakes this season. The stock, consisting of approximately 1,200,000 feet of white pine, is being loaded by the barge *Arthur* at the head of the lakes.

The Transfer Lumber & Shingle Company has 100 carloads of shingles in transit from the Coast. The stock will be transferred at the head of the lakes for shipment to the local yard by vessel.

IN NORTHWESTERN NEW YORK.

WATERTOWN, N. Y., Sept. 30.—Lumbermen, paper and pulp manufacturers, power owners and power users and others are lending their efforts to the campaign of education recently started by the Watertown Chamber of Commerce to secure a favorable vote by the voters at the November elections on the Burd constitutional amendment. This amendment provides that not to exceed 3 percent of the State forests may be used for sites of water storage dams and reservoirs. The State holdings amount to about 1,600,000 acres, 3 percent of which would be 48,000 acres. These dams and reservoirs would be built and maintained by the State, the property benefitted paying an annual revenue to the State to be used in maintaining them and in paying off the indebtedness. It is pointed out that only land which is practically valueless for any other purpose would be selected for the reservoirs.

For the first time the manufacturers and the sentimentalists are together in the movement. The Empire State Forest Products' Associations, the Association for the Preservation of the Adirondacks, the New York Board of Trade and Transportation, the Northern New York Development League, the New York State Waterways' Association and the Watertown Chamber of Commerce are this year all fighting for the same end and, it is claimed, because of the fact that the Burd amendment has been drawn in a manner satisfactory to all.

Heavy rains a few days ago again checked the spread of fires that had begun to recur in the Adirondack region. In spite of the dryness of the season this year and the countless number of small fires, the actual damage has been comparatively slight and out of all proportion to the number of fires. Excellent fire fighting service is said to be responsible for the lack of excessive damage.

LAKE ERIE PORTS

FROM WESTERN NEW YORK.

BUFFALO, N. Y., Oct. 1.—An affair in which lumbermen were much interested was the gymkhana held at the clubhouse of the Automobile Club of Buffalo last Saturday. The attendance was about 2,000 and most of the lumbermen connected with the club were present. President M. M. Wall had general charge of the events and acted as referee. O. E. Yeager and A. W. Kreinheder were among the judges. The afternoon sports were followed by a dinner and dancing.

The C. M. Bott Furniture Company, which was lately organized to carry on a manufacturing business here, is building a three-story brick factory at East Ferry and Leslie Streets, to be 80 by 150 feet. A dry kiln also will be put up. The site is on the Erie Railroad. The members of the company are Charles M. Bott, who has for some time been in the furniture business, Paul Bott and J. K. Gardner.

Receipts of lumber by lake for the last week were 2,950,000 feet, which is below the average for this season of the year. Receipts of shingles were of about the usual size, amounting to 23,910,000.

Building operations have shown some improvement during the week, the total number of permits numbering seventy-five, with forty-one frame dwellings. The total cost of permits was $238,700.

It appears to have been left to the Batavia & New York Woodworking Company, at Batavia, which is controlled by Scatcherd & Son, to make the first protest against the proposition of the New York City aldermen to forbid the putting of any wood in structures more than 150 feet high. The fight against it is still on, as the ordinance has not been finally passed.

The mill of the A. A. Engle Lumber Company at New River, which was destroyed by fire on July 9th, has been rebuilt and will start this week. A large amount of oak is being sawed.

FOREST CITY TRADE NOTES.

CLEVELAND, OHIO, Oct. 2.—The general tone of the market can be said to be only fair. There is no briskness in any of the various lines of stock and some woods are discouraging to dealers. Southern pine is still being quoted at wavering prices and some of the quotations are particularly discouraging to dealers who had reason to believe that this season of the year would show a gradual strengthening of southern stocks and a growing demand from buyers. Reduction in price of hemlock has not materially increased the buying. Yardmen expect further declines, although the dealers firmly deny that such is possible. The hardwood market shows whatever little sunshine may be apparent from this standpoint. In some grades of oak and the fancy stocks there is a good demand and prices are firm. Receipt of orders for interior finish stock and furniture material has been encouraging.

Employers interested in the proposition to place before the voters of the State a referendum on the Greene employees' compensation and the Warnes taxation bills are disappointed at the stand taken by the attorney general in throwing out all of the referendum petitions because fraud in some of the signatures was discovered. It is probable that it will mean a long siege in court to determine not only the status of these two bills but the initiative and referendum act as well.

The Cleveland Cooperage Company took out a permit last week to erect a shop and storage house at an estimated cost of $15,000. The company recently increased its capital.

NORTH ATLANTIC COAST

LOG CUT TO BE SMALLER THAN USUAL.

BANGOR, ME., Sept. 29.—From figures compiled by a representative of one of the largest timberland interests in northern Maine the lumber cut on the St. John, Aroostook and Fish River waters will be considerably smaller this year than usual. The total cut in Maine on waters tributary to the St. John River and on the main St. John will not be far in excess of 60,000,000 feet, according to the present indications.

This condition is due largely to the fact that a great many logs were left over from last season at the mills and in the woods. The Portage Lake Mill Company will not cut nearly as much this year, the mill at Portage having been destroyed by fire early in the spring, and all the logs which would have been manufactured this season are at hand. This company has erected a new and larger mill on the site of the old, with modern equipment, and will be ready to begin operations by October 15.

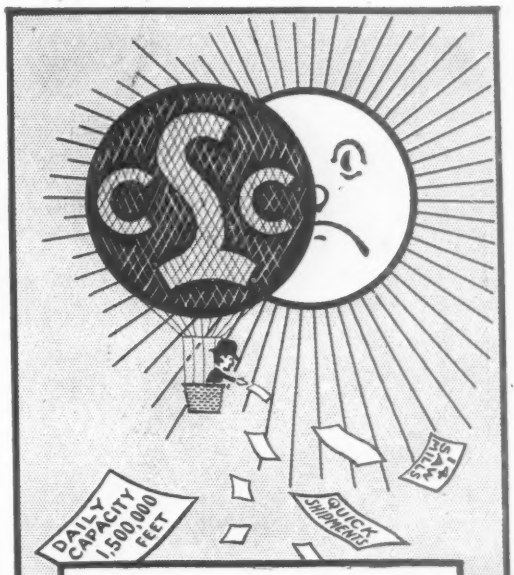
The Stetson-Cuttler Company, of St. John, will have about the usual amount of Maine logs to go down the river with the drives in the spring, and it seems to be the mills on the side of the boundary that are curtailing their cut.

Wages on the St. John waters are said to be high and good men for the woods are scarce. The operators are paying from $25 to $36 a month, and are finding it difficult to fill their camps.

The operators have already begun, but the camps are not all definitely located yet, and by the first of next month it is possible that the figures will show somewhat of an increase in the proposed cut, although the amount will not be up to the usual cut in this section, which is normally close to 100,000,000 feet.

The following figures show the estimated cut of the various operators on the Maine side of the St. John River:

Arthur L. Noble, of Fredericton, N. B., will cut about 4,000,000 feet on the upper St. John waters for the St. John market, probably the Stetson-Cuttler Company; Albert M. Currier, of Seven Island, Me., is to cut for the Stetson-Cuttler Company and plans to take out 5,000,000 feet on the upper St. John waters; Nazire Belletier, of St. Francis, is to operate on the main St. John River and will cut about 1,000,000 feet for the Stetson-Cuttler Company, of St. John; Charles E. Jones, of St. Francis, is to operate for the St.



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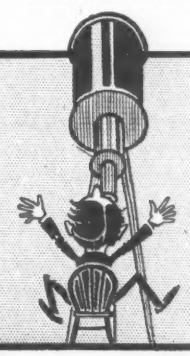

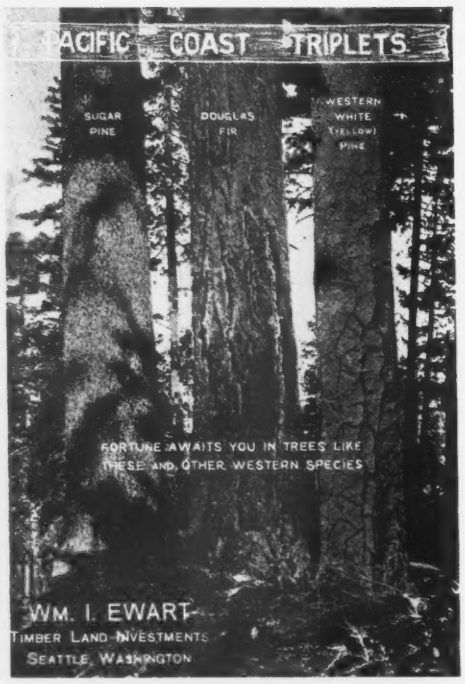

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FERRY-BAKER LUMBER CO.
EVERETT, WASH.

No Matter Where You Are Located

we know the particular requirements of your section for we have been catering to the Eastern Trade for 15 years shipping high quality.

Fir and Cedar

Lumber Products. When we talk quality we are prepared to back it up for we log our own timber and saw it in our own mills. Constant improvements in our plant have kept our **"Electric Brand"** products in the vanguard of quality manufacturers.

Ferry-Baker Lumber Co.

General Office and Mills,

CHAS. VAN PELT, Eastern Mgr. 1029 Lumber Exch., Minneapolis. EVERETT, WASH.

Stock up Now with Western Cedar Posts

bought right direct from the producer and show your trade how real live cedar posts, cut from green logs will defy decay.

We have them Axe-Split or Round

Tri-State Cedar Co.

954 Security Bank Bldg.
MINNEAPOLIS, MINN.

COEUR-D'ALENE, IDAHO

ORDER OUR
"Big Stick Brand" of Red Cedar Shingles
and avoid shingle trouble.
MILLER BROS. LUMBER CO., Bellingham, Wash.

John Lumber Company for the mill at Van Buren. He will cut from 4,000,000 to 5,000,000 feet on the main St. John River; J. J. Wheelock, of St. Johns, Me., will take out 1,000,000 feet on the St. Francis River for his shingle mill at St. John and the general market; W. H. Cunliffe's Sons, of Fort Kent, will cut from 5,000,000 to 6,000,000 feet on the Allegash waters, which will go to the Stetson-Cutler Company; the St. John Lumber Company, of Van Buren, will operate on the Allegash waters to the extent of about 6,000,000 feet; the Fish River Manufacturing Company will cut about 15,000,000 feet on the Fish River waters for the mill at Eagle Lake; on the same river the Portage Lake Mill Company, which has the mill at Portage Lake, will cut about 6,000,000 feet, considerably less than usual, owing to the large amount of logs on hand; the Ashland Company is to cut from 8,000,000 to 10,000,000 feet on the main Aroostook River for the big plant at Ashland; T. H. Phair, of Presque Isle, is cutting railroad ties on the Aroostook River waters and expects to take out between 150,000 and 250,000 ties.

THE KEYSTONE STATE

QUAKER CITY NEWS.

Hardwoods in Good Position—Cypress in Growing Demand—Week's Building Makes Good Showing—Collections Are Easier.

PHILADELPHIA, PA., Sept. 29.—Nothing but the new tariff bill is so persistently conspicuous by its absence as that expected betterment in the yellow and North Carolina pine markets. Each week shows fresh indications that it is surely coming, but it fails to arrive. While some concerns report a tightening at the mills, and other report an encouraging revival of activity at the yards, others report North Carolina box as plentiful as at any other time recently, and a few water shipments are reported at prices that are too low. With these two woods, which constitute the bulk of the trade here, marking time, renewed activity in other lines is delayed, but the others are moving steadily, at satisfactory prices, and dealers have no reasonable cause for complaint.

The hardwoods are steady, and little stock is accumulating. White oak, plain and quartered, is in strong demand, at good prices. Red oak, while not so strong, seldom lacks a market. Birch, beech and maple are taken as offered, at good prices, flooring being in especially good demand. Chestnut is strong in low grade, with the better stock not so much sought. Gum is holding its position. Poplar is strong in low grade, and steady but inactive in the better. Bass and ash are ready sellers, at profitable figures. Mahogany and the fancy woods continue oversold. White pine is less active than a fortnight ago, but is steady in price. Box grade, in all widths, is scarce. Spruce is selling readily, at list, and no stock is accumulating. Hemlock conditions do not change, and, while not all that could be desired, are not bad. Cypress continues to grow in demand, and to sell readily at steady prices, shingles being generally oversold. Some dealers report stiffened prices from yellow pine mills in southwestern territory, and some others claim they are getting better prices for flooring. Cedar shingles have been active and firm. Lath of all kinds are scarce, and while a number of cargos have been received lately they have been quickly disposed of.

Building business made a good showing last week, when 218 permits were issued, for 284 operations, the value of which was $1,773,370. The larger items of this were for manufacturing buildings and places of amusement, but there was over $235,000 worth of dwelling operations.

General mercantile reports show improvement in some lines, but buying generally is conservative. Collections are reported as slightly easier, but still hard.

The October meeting of the Lumbermen's Exchange has been postponed from October 2 until the 9, and will be the the first of the series of experimental meetings that will be held in the evening. The members will meet at 6:30 for lunch, and the meeting will be held immediately following.

Harry A. Russell, of Howes & Russell, who has been superintending the Birch River Lumber Company's plant at Birch River, W. Va., is here, but will probably return to the mill soon.

The Rev. Edmund Lloyd Souder, son of S. Ashton Souder, of E. A. Souder & Co., was ordained today by Bishop Rhinelander, and will soon sail as a missionary to China. Mr. Souder is a graduate of Episcopal Academy, and Harvard, where he was captain of the gymnasium team. Last summer he won a B. A. degree in a post-graduate course at Columbia.

George H. Hugenir, of Schofield Bros., thinks the most important development recently in the local lumber trade is the arrival at his house of Elma Anne Hugenir, who first saw light Sunday, September 21.

AT THE HEAD OF THE OHIO RIVER.

PITTSBURGH, PA., Sept. 30.—There is a slower demand for stock and buyers are wary of taking on more than actual and imperative needs demand their doing. The threatened car shortage has been making itself felt. It has affected shipments from the South and has delayed shipments in the East. Building operations are being rushed to get them in winter shape as early as possible. Retail yards are fairly well filled with stocks and there is a light demand from that source.

The Duquesne Lumber Company reports little change. Vice President Adams, who spent a month in the East, says that there is no change in sight. President H. M. Domhoff, of the Acorn Lumber Company, reports a season of quiet, with prices generally lower for yellow pine and hardwoods. The Forest Lumber Company reports business quiet, with an effort on the part of buyers to curtail in every way. President A. J. Diebold has recently been made president of the Commercial Club of Pittsburgh. The West Penn Lumber Company notes a dullness in new business, but E. H. Stoner, of this company, is not pessimistic by any means, and finds much to encourage his belief in inquiries that are coming out. A. A. Germain, of the Germain Company, is in the Northwest on business. The company reports a fair business.

At the National Conservation Congress to be held in Washington, November 18-20, the subject of forestry will be handled by a main committee, with subcommittees which will report on Federal and State forest policies, forest taxation, fires, lumbering, planting, utilization, forest schools, and scientific forest investigations.

MICHIGAN

THE SAGINAW VALLEY.

Canadian Importations Marking Time—Beet Movement Lessens Car Supply for Lumber—Skilled and Unskilled Labor Notably Scarce.

BAY CITY AND SAGINAW, MICH., Sept. 30.—The little schooner *Fearless*, with a cargo of 136,000 feet of lumber consigned to Bradley, Miller & Co., is the only lumber arrival for nearly two weeks. Local dealers who import lumber from Ontario are waiting for the President to sign the tariff bill that will save them $1.25 a thousand feet on all lumber imported during the season of navigation. A lot of lumber is bought in the Georgian Bay district for delivery here. The Mershon, Parker, Eddy Company has probably 10,000,000 to 15,000,000 feet or more; Foss & Co. have a number of million feet, handling the cut of Eddy Bros. and a number of others; the Booth & Boyd Lumber Company has a number of cargoes; Germain & Co. have two or three cargoes, and there are other scattering lots.

Lumber shippers expect a shortage of cars for lumber shipments. Just now the beet sugar factories are clinching every available car for moving beets. Gondolas are already reported scarce.

The Walsh Manufacturing Company is rebuilding its stave and heading plant burned some months ago at Frederic, and expects to resume operation early in November. The H. C. Johnson Company, which is building a big sawmill plant on Drummond Island, is scouring the lower peninsula for men and is offering $2.15 a day for common labor, and is picking up carpenters and millwrights. Help continues scarce in that section and several hundred good men could find work in the lumber camps and mills. The Rhoades & Shafer shingle and heading plant at Clare, 50 miles west of Saginaw, has gone out of commission after more than a quarter of a century of activity. The labor problem and scarcity of timber tributary to that locality are among the causes for closing. The dry kilns are being torn down and it is expected will soon be dismantled and the machinery removed. The firm has paid out $15,000 annually for material and labor the last eighteen years.

It is expected the Saginaw Woods Products Company, the plant of which was destroyed by fire some months ago, will locate at Gaylord; arrangements have been effected with the business interests of the town to carry a portion of the stock. There is an ample supply of raw material there for the plant.

The Kneeland, Bigelow Company shipped out 3,000,000 feet of manufactured lumber for the month ended today.

NORTHERN MICHIGAN NOTES.

MANISTIQUE, MICH., Sept. 30.—Northern jobbers are preparing for the winter logging season and are getting camps ready and sending out supplies. Indications are that the logging season will be brisk this winter.

The steamer *Susie Chipman* and the schooner *Petrel* took lumber cargoes to Milwaukee last week. Schooner *Newhouse* took slabs to Manitowoc, Wis. Schooner *Emanuel*, loaded with cedar, reached Sturgeon Bay, Wis., last week after nearly being wrecked in a severe storm. The barge *Plymouth*, loaded with cedar, was tied up under bond at Menominee recently because of a claim of the C. J. Huebel Cedar Co., Menominee. The vessel was put under $8,500 bond.

The yacht *Glenda*, owned by J. W. Wells, the Menominee lumberman, has started on a long cruise via the St. Lawrence River to New York. Mr. Wells and party expect to spend the winter in the West Indies cruising in the yacht.

Sheboygan (Wis.) woodworking plants are booming. The Sheboygan Cigar Box Lumber & Manufacturing Company is operating thirteen hours a day and the Hildebrand Manufacturing Company eleven. Other plants are working overtime and from 1,000 to 2,000 more men could be employed in the city, a leading manufacturer states. The Winter Company, of Sheboygan, has electrified its entire woodworking plant, sixty-two motors aggregating 280 horsepower being installed. The plant is the first woodworking concern in the country to install all ball-bearing motors. The steam plant will be kept for emergency and heating purposes.

The Graef Manufacturing Company, at Appleton, Wis., is erecting an addition to its lumber plant to serve as a warehouse.

The Millard Manufacturing Company, which has been doing some millwork at Bay City, has definitely decided to locate in Appleton, Wis. The Appleton Commercial Club has leased the Pickling Co.'s property, including three acres, 300 feet of sidetrack, a building 160 by 140 feet in size and two smaller buildings. By spring it is expected upwards of seventy-five hands will be employed. The company manufactures staves and hoops.

THE CITY OF THE STRAITS.

DETROIT, MICH., Sept. 30.—While the volume of fall business handled by the local lumber dealers is fair, there is a general feeling of apprehension and unrest that appears to be general throughout the trade. Business conditions locally are by no means satisfactory, due no doubt to this feeling of uneasiness that seems to prevail at present in all lines of trade.

"The volume of business is about two-thirds what it was a year ago at this time," said William E. Brownlee. "Instead of a bright, optimistic outlook, there is a marked feeling of restraint on the market. National political influences are perhaps responsible for this feeling. Business has fallen to that stage where it is necessary to go out and solicit orders—a condition that is both unsatisfactory and strange to Detroit lumber dealers. The depression is general all over the country—a mental depression due no doubt to the unsettled outlook, rather than a physical depression."

More than passing interest will be taken in the various reports on lumber trade conditions throughout the State and the reports of the stock on hand owing to the feeling of uneasiness that is depressing trade.

Cost estimates for building permits taken out in Detroit last week represent an aggregate expenditure of $567,730 in construction work, compared with $421,145 the previous week and $431,440 for the corresponding week of last year. There were 158 permits issued for new buildings, the combined cost of which is $544,790, against 142 permits and $398,800 for the week before, and 141 permits and $398,785 for the week in 1912. The aggregate for the first eight months of the year is approximately $6,000,000 greater than for the same period in 1912. There has been but one month in the year, February, when there has been an appreciable decrease. It was accounted for by the fact that both the Michigan Central Terminal and the Dime Savings Bank Building were both taken out in February, 1912.

F. B. Ward, of Bay City, Mich., was in Detroit during the week looking over the market.

WISCONSIN

CREAM CITY TRADE FEATURES.

Active Building Season Drains Stock of Retail Yards —Business Expected to Assume Fall Proportions Shortly—Hardwood Demand Increasing.

MILWAUKEE, WIS., Sept. 30.—Business is fairly active in the local market and trade is expected to assume fall proportions within the next week or two. Building operations in Milwaukee established a new high record during September, the total investment showing a gain of about $115,000 over the corresponding month a year ago. The number of permits being issued from day to day shows a steady increase and there is every indication that the fall building season will assume a new high mark this season. An unusually large number of big buildings are going up this year and so conditions have been fairly active during the last few months.

The situation in Milwaukee retail yards seems to be typical of most yards about the State. The active building season has resulted in a steady drain on retail stocks, while most yards have not replenished as rapidly as they would ordinarily have done. Prices in most lines of lumber have been high throughout the season and wholesalers say that dealers have been hoping for a decline and have ordered only to satisfy their immediate wants in most cases. The impression seems to be gaining ground, however, that no price concessions can be expected from now, considering the increasing demand and the shortage of stocks. Dealers about the State are ordering much more freely than has been the case for several weeks.

The demand for hardwood from factory buyers seems to be increasing in some lines of activity. The sash and door manufacturers are inclined to order only to meet their present requirements, but the trade in other lines is showing more life. The box manufacturers are buying well, especially in low-grade hardwood, and the market in this line is holding firm. There seems to be a feeling among local consumers of low-grade hardwood that another shortage may be experienced in this line, so many concerns are placing orders for stock to last them for several weeks. Receipts of southern hardwood seem to have been a little larger of late, but prices are being well maintained. There is a good movement in northern hardwoods, with birch, maple and basswood as the leaders. Stocks at most of the northern mills seem to be showing an incease.

Activities of the Trade.

The Fred Schubring Lumber Company, of Wausau, has gone out of business, having completed its sawing operations. A consolidation with the Mohr-Stotzer Lumber Company, which has a mill at Holt, has been effected and the reorganized company will be known as the Mohr Lumber Company. The company has large timber holdings in Marathon and surrounding counties and it is understood that most of the timber will be sawed in Wausau. J. S. Griffith, formerly of Holt, now located in Wausau, will be manager.

The officers and directors of the Mellen Lumber Company, of Mellen, were reëlected at the fifth annual meeting of the concern, held recently.

I. J. Rossmann, who has been manager for several years of the Yawkey-Crowley Lumber Company's yard at Waupun, has resigned to become associated with the Loomans Lumber Company, of Waupun. It is understood that D. J. Loomans plans to retire from active participation in business, after a service of about twenty-five years, and that Mr. Rossmann will become financially interested in the Loomans concern and will later act as general manager.

The Tomahawk Veneer & Box Company, recently incorporated with a capital stock of $50,000, is preparing to occupy on October 2 the old No. 2 mill of the Bradley Company. Cheese boxes and various lines of veneer work will be turned out and from 75 to 100 men will be employed at the start. The company plans to cut 2,500,000 feet of hardwood timber annually. The incorporators of the company are Reinhard Meyer, proprietor of the Reinhard Meyer Box & Veneer Company, at Merrill, and Max Meyer and Julius Gromoll, for several years connected with the Merrill Veneer Company.

It is reported that the Willow River Lumber Company will rebuild its sawmill at New Richmond, which was destroyed by fire on September 11 with a loss estimated at from $60,000 to $75,000. The mill was a large one and had a twenty-year run ahead of it.

ON THE MENOMINEE.

Current Business Presages Heavy Fall and Winter Trade—Woods Work Plans Under Way—Timberland Taxes Increased.

MARINETTE, WIS., Sept. 30.—The volume of business for the week shows a good gain over recent weeks and gives an indication of a healthy fall and early winter business, with most lines strengthening. Marine shipping is heavier than at any other time this season and some big orders are going forward by rail. Users of the better grades of pine, hemlock and hardwoods still show a tendency to place orders only for immediate consumption, but the fall trade is nevertheless fulfilling hopes held out during the summer. The good prices prevailing on low grades of all sorts have made up for some weaknesses in better stocks. Building is fair, as shown by comparisons with other years, according to reports received by the wholesalers, and some of the sash and door and interior woodworking establishments will be in the market with heavier orders soon, it is expected. The railroads are placing some good orders, although business from this source has not been so heavy as last year to date, probably because of the shortage in corn and some other crops.

Many of the companies operating their sawmills in the summer only are winding up the season and making preparations for fall and winter work in the woods. The Girard Lumber Company, of Dunbar, has finished its season's cut and the sawmill will be closed until winter hauling begins. The Island mill of the N. Ludington Company in Marinette has also finished its season's cut. The Peshtigo Lumber Company's mill will cut timber from the river until the freeze-up. The plant may also be operated during the winter.

Napoleon Robare is establishing several camps near Camp Clark, south of Ishpeming. He will employ about sixty men and expects to get out a quantity of timber. B. J. Goodman, sr., of Ishpeming, is planning an active season. His camps are near Little Lake, where he has a mill. The lumbering operations he has carried on north of Clowry for several years are about at an end, as the timber is exhausted, but a very heavy cut will be made in the Little Lake region. The I. Stephenson Company, of Wells, Mich., will have some camps on the Dickinson County line near the Flat Rock River. The company has a five years' cut ahead in this region and a set of camps were built this summer along Schwartzer's Creek. Sixty men were employed all summer and the number will be more than double by winter. Practically the last stand of merchantable norway pine in the Flat Rock district will be logged by the I. Stephenson Company this coming winter. The tract will yield 5,000,000 feet.

R. F. Gibbs & Son, of Iron River, Mich., are establishing a camp eight miles northwest of Iron River. The company has purchased 2,600 acres of heavily timbered land in that section. From two to five miles of track will be laid to connect with the North-Western line to get the timber out. About 5,000,000 feet will be cut during the winter.

As a result of a visit to Marquette, Mich., of the Michigan Tax Commission, timber valuations for taxation purposes have been increased three and even four times in many instances over the figures of the local assessors in Marquette County. Orlando F. Barnes of the commission said the State tax department has considered the worth of the timberland from the harvesting standpoint and had placed full cash value on the lands.

The Millard Manufacturing Company, manufacturer of hoops and staves, has decided to locate at Appleton. The company has several small plants in upper Michigan. Appleton gave the company a site and factory buildings and from thirty to forty men will be employed during the winter and from sixty to seventy-five when more timber can be secured next summer.

W. H. Hatton, well-known New London lumberman, is being urged by many Wisconsin newspapers to enter the field for the Republican nomination for governor.

MINNESOTA

A MINNESOTA LUMBER CENTER.

MINNEAPOLIS, MINN., Sept. 30.—Appraisals of State timber to be sold in St. Paul were approved at a meeting of the State timber board Monday, and about 60,000,000 feet of timber is to be offered at the sale October 28 at the State capitol. Most of this is burned-over timber or tracts damaged by storms, with considerable dead and down timber, as the policy of the State is to hold all good merchantable timber until it is fully matured.

Preparations are going forward actively for the season's logging. State Forester W. T. Cox, who is in close touch with the Minnesota situation, says that while the large operators are cleaning up, and are curtailing their operations, there will be more timber cut this year by small concerns than ever before, especially in white cedar. He expects to see a winter of considerable activity with an output of nearly the same volume as last year.

J. E. Gerich, of the MacGillis & Gibbs Company, Milwaukee, Wis., was in Minneapolis visiting the local office last week. H. H. Shepeck, representing the I. Stephenson Company, Wells, Mich., was in Minneapolis last week concluding a three months' tour of the Middle West and Northwest, and reported a light trade in the drouth-stricken sections, but a very satisfactory demand on the whole for white cedars products, which he was pushing. Howard Deneen, of Winnipeg, Man., sales manager for the Rainy River Lumber Company, stopped over the other day on his way east. J. W. Phillips, representative of the Lamb-Davis Lumber Company, Leavenworth, Wash., is back from a short western trip. F. W. Shepard, of the North Coast Lumber Company, announces that the Seattle office has been moved from the Henry Building to 518 White Building.

AT THE HEAD OF THE LAKES.

DULUTH, MINN., Oct. 1.—Numerous lumber buyers visited the Duluth market last week and deals are pending. Among the buyers that were here last week were J. A. McKenny of the Twin City Lumber Company, of North Tonawanda; Fred Prescott of the Saginaw Bay Lumber Company, of Cleveland, and George Gynn of the Wilson Avenue Lumber Company, also of Cleveland.

Twenty-six building permits were issued in Duluth last week, and the total cost of improvements is placed at $88,325. The growth of Duluth as a manufacturing center is marked. The new impulse in that direction appears to have been given by the establishment here of a steel plant by the Steel Corporation, and involving a total expenditure of about $16,000,000. Several factories have been established here this year, and plants for two or three others are being erected. Excavation for the plant of the Western Spinning Company, at West Duluth, is being made.

About 100,000 feet of logs for the Duluth Log Company's mill at Aitkin floated past their destination last week, having arrived sooner than was expected. The logs will be disposed of at some down river mill. Aitkin is on the Mississippi River.

At the Duluth Industrial Exposition held in the curling rink last week the lumber industry was well represented. The attendance was 120,000. It was the biggest show of the kind that has taken place in Minnesota this year, with the exception of the State fair.

IN AND AROUND CLOQUET.

CLOQUET, MINN., Sept. 30.—The last week has been one of heavy shipment from Cloquet. A rush of cargo orders to get stock to the docks before the fall advance in lake freights rates has kept loading crews busy and forced overtime loading. Orders from the yard trade continue to come in at a satisfactory rate and the planing mills have all they can do to keep up with orders. The car supply shows increasing evidences of stringency, and though shipping has not been seriously interfered with required equipment has not been available at all times as desired.

Every available man is being used in the shipping crews. Preparations for logging operations together with those under way are drawing many of the men to the woods and further decrease in the number available for work in the yards will restrict shipments to some extent.

The mill of the Johnson-Wentworth Company will be shut down for repairs at the close of this week. The mill will be thoroughly overhauled and put in commission for the winter run as soon as repairs are completed.

W. J. Campbell, of Oshkosh, called on Cloquet concerns the latter part of last week. H. J. Thompson, of the Thompson Furniture Company, of Duluth, was in the city Monday of this week making purchases of stock for his concern.

H. C. Hornby, accompanied by Mrs. Hornby, left the first of the week for a trip to points in the West.

Two million trees will be planted on the national forests in Utah, Nevada, and southern Idaho during 1914.

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SEATTLE

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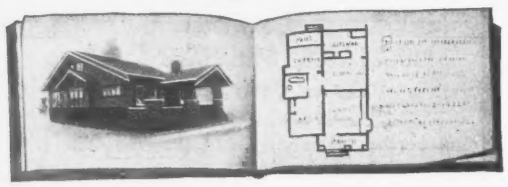

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FROM THE PACIFIC NORTHWEST

COMMENCEMENT BAY LUMBER NEWS.

Box Trade in Unprofitable Shape—Durability of Cedar Shingles Exemplified—Valuation of Washington Railroads—Rebuilding a Big Plant.

TACOMA, WASH., Sept. 29.—E. J. McNeeley, president of the Eatonville Lumber Company, left recently with Mrs. McNeeley for San Francisco on a trip around the world, expecting to be gone several months. The city offices of the Eatonville company will continue with the Hubley-Crowell Lumber Company in the Bank of California Building. T. S. Galbraith has the active management of the big plant at Eatonville and its output is handled through the Tacoma & Eastern Lumber Company.

Ralph H. Clarke, treasurer of the Wheeler, Osgood Company, has recently returned from an extended business trip east.

The box trade is inclined to be in the dumps these days, according to J. T. Moore, president of the Pacific Box Company, one of the largest manufacturers in the Tacoma district. Said Mr. Moore yesterday:

Trade is nothing at all compared to what it ought to be or to past years. In the South American market, for example, nothing at all is coming. What has happened down there we don't know, but we have no indication that the business is not ours. We have been getting some inquiries from the United Kingdom lately that indicate that with the opening of the canal considerable business will develop. There is not much of anything in the East. Of course we have some orders and are running along, but the box business is away below normal.

The North Western Wooden Ware Company, which is rebuilding here its big plant that burned in August, has placed orders for seven dry kilns with the Puget Sound Machinery Depot of Seattle. The kilns will be of brick construction, each 20x120 feet and of standard type. They are expected to be completed in October. The contract for the factory building proper has been awarded to Cornell Bros., of this city, who already have work under way. The factory building will be of mill construction and will require about 400,000 feet of lumber. The total cost of the plant, building and equipment is estimated at $100,000.

Contractors are rebuilding Trinity Episcopal church in this city, a frame structure, and are preparing to remove from the roof cedar shingles that have been there twenty-two years and are still intact. Such splendid service have the shingles given that the rebuilt church will be shingled on both roof and sides, this being regarded as most durable frame construction.

The Tacoma & Eastern Lumber Company, Tacoma Building, finds the fir market still slack, but hopes for some improvement with the natural fall demand that is expected. Mills of this agency have been curtailing output. The agency manufactures all kinds of western Washington lumber, fir, hemlock, cedar and spruce, and makes a specialty of car material, spruce and cedar siding and clears, as well as big timbers, surfacing up to 48x48-126 at its Pacific National mill.

The Hofius Steel & Equipment Company is now occupying the first of the buildings erected at its new Tacoma plant on the tidelands at the east end of the Lincoln bridge. Hill Hudson is manager of the Tacoma branch of the company and it will devote its attention largely to sawmill equipment of all kinds.

C. O. Sutherland, president of the Covington Lumber Company, is planning to leave next week for the Orient and Philippines on a six months' trip.

The actual valuation of the railroads of this State, real and personal property, as found by the State tax commission, is $342,531,013, as compared to $342,515,593 in 1912. The Northern Pacific leads with $126,165,337 in 1913, the Great Northern being second with $70,007,630; the Oregon Railroad & Navigation Company third with $48,646,517, and the Milwaukee has $37,366,034.

Announcement is made by the State board of equalization that the 1913 State tax levy will be 8.81 mills, which is 3.02 mills above last year and is the highest in the history of the State.

The new mill of Emery & Nelson, at Napavine, Wash., began sawing last week. The old mill closed last week. The new plant has a daily capacity of 60,000 feet and the company has enough standing timber to run for more than ten years.

DISASTROUS FIRE AT RAYMOND.

RAYMOND, WASH., Sept. 28.—The plant of the Southwest Manufacturing Company, comprising a shingle mill with a daily capacity of 350,000 shingles and a cedar siding mill of 75,000 feet daily capacity, was destroyed by fire at 3:45 o'clock this morning, entailing a loss estimated at $150,000, partly covered by insurance. In addition to the plant 8,000,000 shingles and 1,000,000 feet of red cedar siding stored in the sheds and on the dock were burned. The machine shop and dry kilns were saved by the Raymond fire department.

The plant adjoins the Raymond Shipyard, of which it was originally a part, and the flames were prevented from extending to that establishment. Two weeks ago the steamer *Solano* was launched from the ways, which was directly in the path of the fire.

The location of the plant is near the upper end of the deep water channel of Willapa River, and was taken over a little more than a year ago from the owners of the old shipbuilding company, and remodeling has been in progress since that time. The shingle mill was the largest of the group controlled by E. E. Case, being the fourth shingle mill installed in Raymond by him, with an aggregate daily capacity of more than 1,300,000 shingles a day. The plant had been shut down Saturday night to complete the installation of additional machinery in the sawmill and planing mill, and as the fire originated near the shingle mill engine its cause is in doubt. It had gained considerable headway before discovery by the watchman.

F. R. Brown, of Olympia, and E. E. Case are the principal stockholders in the Southwest Manufacturing Company and the Case Shingle & Lumber Company.

In March of the present year the large steamer *John A. Hooper*, after filling the hold with lumber, came up to the Southwest mill and took on a deckload of 9,000,000 shingles, and the photograph shown herewith was made at that time by an AMERICAN LUMBERMAN staff photographer. The event marked almost a new era in the shipping interests of Willapa Harbor, as it demonstrated that the channel to and above the mill and the new shipbuilding plant would accommodate vessels drawing 18 feet.

AROUND THE GRAYS HARBOR COUNTRY.

HOQUIAM, WASH., Sept. 29.—With nine large tramp steamers chartered to take lumber from Grays Harbor mills, the first of the fleet of carriers to arrive next week, activity in the lumber business has revived on the harbor. Early return of a healthy market is expected. Approximately 24,000,000 feet will be carried away by the vessels. Vessels of the Strath line have been chartered. The first of the fleet, the *Strathesk*, is expected to reach the harbor early next week. The *Strathesk* will go to Port Pirie, Australia, after completing its cargo on the Sound.

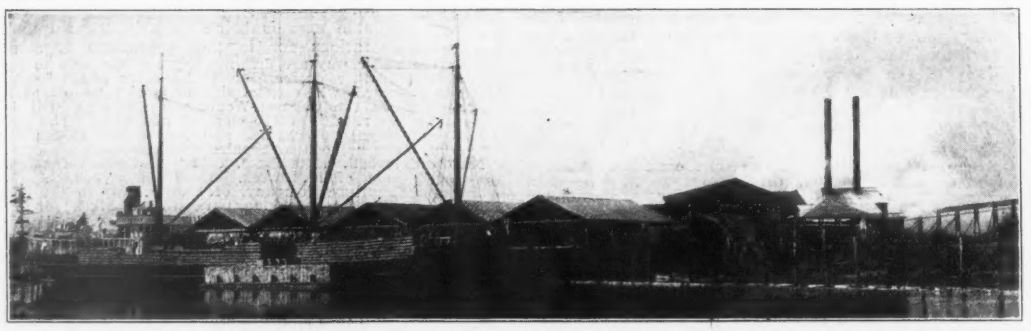
The plant of the Southwest Manufacturing Company, at Raymond, was destroyed by fire September 23. It consisted of a modern cedar siding mill of 75,000 feet daily capacity and a 400,000 feet capacity shingle mill, which with 8,000,000 shingles and 1,000,000 feet of siding were burned. The loss is estimated at $150,000, with $102,000 blanket insurance. The insurance covered also the machine shop, dry kilns and storage lumber saved from the flames. The Southwest company was running steadily, with orders ahead to keep it busy at capacity during the winter. The stockholders are E. E. Case, F. R. Brown and Charles I. Hinkle. Immediate rebuilding is expected.

J. V. G. Posey, of the Posey Manufacturing Company, has started on a trip that will extend through the East and to Hamburg, Germany. His purposes are to glean new ideas to use in his business, manufacturing piano sounding boards, and to find new markets for his products.

ON BELLINGHAM BAY.

BELLINGHAM, WASH., Sept. 28.—Shingle manufacturers, lumbermen and logging camp operators are considerably agitated over the unfavorable condition of the lumber, shingle and log market. September closes with an unpromising outlook; in fact, the shingle market is shattered, the lumber market is "shot to pieces," and the log market is awry. And all this came about in short order. Announcement is made that rail-shipping business is at a complete standstill, so far as lumber and shingle shipments are concerned. At least 75 percent of the shingle mills of Whatcom and Skagit Counties are obeying the close-down mandate, and late advices received in this city indicate that by October 1 few, if any, of the shingle mills of the Northwest will be in operation, unless price conditions are satisfactorily adjusted. The cargo-shipping mills of Bellingham Bay are working on orders that were booked during the summer, but no new orders are being received. Following in the wake of the perturbed conditions of the lumber and shingle markets is the report that log prices, likewise, are on the descending scale. Only a few weeks ago the loggers' association voluntarily reduced log prices $1 a thousand feet and it is expected that a reduction of another $1 a thousand will be forthcoming.

Possibility of the opening of a lumber market in Russia is the latest news of encouragement to manufacturers of this city. H. H. Matteson, secretary of the Bellingham Chamber of Commerce, received an important communication from Dr. I. M. Goldstein, professor of political economy at the University of Moscow, and who is also the personal representative of the Russian prime minister, in which is sought direct facts and data anent the lumber industry of



PLANT OF THE SOUTHWEST MANUFACTURING CO., RAYMOND, WASH., RECENTLY DESTROYED BY FIRE.

this section. Dr. Goldstein's letter intimates the intention of a huge syndicate composed of wealthy Russians to put on a line of steamships flying the Russian flag between Vladivostock and Puget Sound, and special emphasis is placed on the ability of lumber manufacturing concerns of Bellingham to supply large cargoes of lumber.

Logging camp and mill operators of Bellingham and contiguous territory evince signs of pleasure over the action of the Pacific Logging Congress which has just held an important session at Spokane in selecting Bellingham as the place for holding the annual convention in 1914; also the fact that one of the city's leading loggers and lumbermen, J. J. Donovan, of the Bloedel-Donovan Lumber Mills, was elected president of the Pacific Logging Congress.

Despite the serious aspect of the general lumber market the week-end shipping record shows that a busy scene was enacted at the waterfront mills.

Information given this week by the Forset Service shows a gratifying condition anent the subject of forest fires. During the year only 2,260 fires were reported by the various forest rangers in the Washington National Forests and the majority of these were but incipient blazes quickly extinguished by the splendid organization of fire fighters instituted during the season.

PUGET SOUND NOTES.

SEATTLE, WASH., Sept. 28.—There is no change in the market situation for west coast lumber products this week. Demand continues light with prices weak. While there is a decided curtailment on the part of the lumber mills of western Washington, it so far has had little effect on the market. This is due in a measure to the fact that log prices have fallen off at least a dollar a thousand. The closing of a number of Puget Sound logging camps within a couple of weeks is probable, and the result will doubtless be a stiffening of log prices. Cargo business, both offshore and coastwise, is also light, although shippers report a number of large inquiries during the last few days. Red cedar shingles are low in price, with only a fair demand. It is believed that there will be improvement in the shingle condition, however, within the next week or so.

Locally, business conditions are in excellent shape; this being reflected particularly in the amount of building going on all over the city. Numerous large office buildings and hundreds of residences are in the course of construction. In addition to this the Seattle Port Commission is spending several million dollars in harbor development, its present main project being a slip and warehouse system on Whatcom Avenue.

One of the biggest deals in ship repair equipment on the Pacific coast was closed this week when the Seattle Construction & Dry Dock Company took over the floating dry dock and marine railway of the Heffernan Dry Dock Company, Seattle. The consideration is reported to be over half a million dollars. The consummation of this deal makes the Seattle Construction & Dry Dock Company rank among the most important in the country, and gives it facilities for handling all classes of vessels.

The Superior Lumber Company, a wholesale concern, and the Crab Creek Lumber Company, operating a line of retail yards, both companies being under the management of I. Rovig, have moved their offices from the Arcade Annex to 509 White Building, this city, where they will have more convenient quarters.

H. B. Waite, of the H. B. Waite Lumber Company, who has been visiting the western office of his concern, located at Seattle, has returned to his home in Minneapolis.

The Mackay Looney Lumber Company is located at 703 White Building, having removed from 510 White Building, recently.

The name of the old firm of Hanford & de Veuve, attorney and manager for the Lumbermen's Indemnity, Exchange, the inter insurance organization of Pacific coast sawmill concerns, has been changed to James H. de Veuve & Co. Nearly a year ago Mr. de Veuve bought the interest of his partner, Frank Hanford, and the firm continued the old name until recently.

ON POSSESSION SOUND.

EVERETT, WASH., Sept. 29.—The establishment of a paper mill at Monroe is believed to be an early possibility. Negotiations are in progress and a location will probably be selected soon. The city has an ideal site for the mill, there being an abundance of pure water in the river and much timber suitable for paper in the woods near at hand.

Manager Scott, of the Crown Lumber Company, of Mukilteo, is receiving many compliments for assistance rendered in the wreck of two Great Northern trains near his plant. One train was derailed and some of the debris landed on the other track. The result was the wrecking of a train that passed just at that time. Manager Scott hurried his entire force to the scene and they extinguished the flames in the coaches and helped release passengers imprisoned in the wreckage.

Lumber and shingles are believed to have reached the bottom of the toboggan and local millmen say that, while there is no great profit for them at the present figures, it is the right time for the retailer to stock up. They believe there should be more doing in the order business soon and that the worst of the quiet season will have passed before very long.

Cargo business to coastwise points continue fair and no trouble is found in securing an abundance of bottoms at low rates. Several cargoes were shipped last week, including the following: Steamer *Willamette*, 800,000 feet of lumber from the Weyerhaeuser dock for San Francisco; steamer *Bee*, 700,000 feet of lumber loaded at the Clark-Nickerson dock for San Francisco; steamer *Hornet*, 500,000 feet of lumber at the Crown plant and a deckload of poles from B. H. Vollans for San Francisco; steamer *City of Pueblo*, four carloads of paper from the Everett Pulp & Paper Company's mill for San Francisco; steamer *Tallac*, full cargo for the J. H. Baxter Company, for California.

Announcement from Washington that approximately 108,000,000 board feet of saw timber and 43,440 linear feet of western red cedar in the Olympic Peninsula will be disposed of has created local interest. The minimum rates at which the timber will be sold are $1.555 a thousand feet for Douglas fir; 50 cents for hemlock and $2 for cedar saw timber. Cedar poles will be sold at 1 cent a linear foot up to 45 feet in length and above that at 1½ cents a foot. The total returns from the sale will be $26,000, of which 35 percent will go to the schools and roads of Clallam and Jefferson Counties, in which the Olympic forest is located.

ON THE WILLAMETTE RIVER.

PORTLAND, ORE., Sept. 27.—Willamette Valley lumber manufacturers have petitioned the Southern Pacific Railroad for a reduction of 4 cents a pound on green rough lumber and weather dried rough lumber to California points north of San Francisco Bay, and it is understood that the reduction will be granted some time before the first of the year. Several Portland lumber manufacturers have asked the railroad company to include mills at Portland, but so far the request has not been granted. The reduction proposed would be south from Oregon City on the west side and south from Hillsboro on the east side line of the Southern Pacific. The railroad company officials believe that the valley mills are entitled to the reduction as they are not benefited by the water competition alleged to favor the mills in Portland, but millmen here who contend for a reduction all the way from Portland hold that water competition does not extend to points to which the rate will be affected.

Movement of crops from the Inland Empire to tidewater has begun and there is considerable of a scramble for cars, although so far the railroads have been well able to cope with the situation. It is feared, however, that scarcity of rolling stock will be felt before the crops have been moved.

News was received here today that the American schooner *Americana*, which sailed from the Columbia River March 3 for Sydney, Australia, with a cargo of lumber, was wrecked on a reef. The crew made their way in the vessel's small boats to Samoa, 1,400 miles distant from the scene of the wreck. The cargo was shipped by Charles Nelson & Co., of San Francisco, and the cargo was loaded at Knappton. The American schooner *Eldorado*, bound from the Columbia River to Antofagasta, is long overdue, and it is feared that vessel, too, has been lost. The *Eldorado* carried a cargo of lumber under charter to W. R. Grace & Co. It received the cargo at Wauna on the lower Columbia.

The British steamer *Craighall* arrived here this week and began loading 3,500,000 feet of lumber for China under charter to the Pacific Export Lumber Company. Davies & Fehon have chartered the British steamer *Straithairley* to carry a cargo of the same measurement from this port to Australia in the near future. The Danish steamer *Arabien* left here this week with a cargo of 4,000,000 feet of lumber for China, shipped by the China Import & Export Lumber Company.

Robert W. Forbes, formerly for several years with the Portland Lumber Company and lately with G. W. Gates & Co., has become associated with the Sullivan Lumber Company, of this city, with offices in the Chamber of Commerce Building. He will look after buying and assist with sales. Mr. Forbes is a former Yale football player and an athlete of renown. F. A. Sullivan, head of the Sullivan Lumber Company, says business is satisfactory, with expectations of a larger volume.

INLAND EMPIRE

IN THE WESTERN PINE COUNTRY.

Where the Logs Go—A Call for Woods Crews—Excellent Forest Fire Record—Big Mill Finishes Cut—Idaho's Proposed Timberland Sale.

SPOKANE, WASH., Sept. 27.—During the last thirty days Bogle & Callahan, logging contractors, have delivered to the Milwaukee Lumber Company at St. Maries, Idaho, $60,000 worth of logs. Logs worth about $75,000 are on the skids ready for shipment to the mill. September 24 a trainload of twenty-seven cars was received from the company's camps on Alder Creek. The Milwaukee mill will be kept in operation until the first of the year, barring accidents, according to the yard superintendent, E. N. Smith.

The Dollar Logging Company has been calling upon local employment agencies this week to supply crews of men for work in the Marble Creek district of Idaho. The Marble Creek district contains large bodies of virgin timber, and will be tapped by a logging road during the winter.

The report of the Federal district forester at Missoula on fires in Montana and Idaho the last season states that the total damage did not exceed $100 to Government timber, nor $450 to private holdings. Of the 338 fires during the season, 157 were caused by railroad engines.

A. W. Cooper, secretary of the Western Pine Manufacturers' Association, will leave Sunday for Chicago, where he will attend the National Forest Products Exposition conference.

The Fidelity Lumber Company has finished its cut of 16,000,000 feet of timber and has closed its plant at Newport. The company is directing its energy to logging operations, which will be carried on extensively.

Plans for the erection of a large lumber mill at Bend, Ore., were discussed this week. J. P. Keyes arrived today from Bend, and expected to meet Dr. Brooks of Minneapolis and Sam Brooks of Powell River, B. C., to discuss the erection of a mill which will have a capacity of 100,000,000 feet. Eastern capital is interested.

George Harper and Otis Harper, of Hamilton, Mont., logging contractors, have established camps on Tincup Creek, Mont. The company has let a subcontract to Green and Ellinghouse of Missoula for 5,000,000 fee.

J. H. Spaulding, manager of the Michigan Lumber Company, reports that negotiations have been completed for the erection of a mill and cedar yard at St. Maries, Idaho.

The Land Board of Idaho has decided to sell at public auction a compact body of 12,250 acres of timberland in the Boise Basin. The Barber Lumber Company, a Weyerhaeuser holding, has offered to bid $100,000 in cash for the timber. This deal has been hanging fire several months. If the Barber company be awarded the contract a logging road immediately will be constructed for a distance of 30 miles. In addition, it is said, the company will operate its Barberton mill, that has not turned a wheel for seven years.

IN THE KOOTENAI COUNTRY.

SANDPOINT, IDAHO, Sept. 29.—The Laclede Lumber Company held its annual meeting at Laclede last Monday and elected John T. Horning president and treasurer, W. W. Von Canon vice president and Andrew Christenson secretary. The three officials above together with G. H. Martin and R. S. McCrea constitute the new board of directors.

Perry Wilson has just started a camp near Bonners Ferry for the Bonners Ferry Lumber Company. Mr. Wilson is also operating a camp near Wrencoe for the Dover Lumber Company. The Fidelity Lumber Company closed its mill at Newport for the season Saturday week, having cut 16,000,000 feet. Fred Kelley's camp near Clarksfork has closed down for the season. Fred Vigue has finished cutting near Bayview and has gone to Vigue to cut for the Humbird Lumber Company.

Two more damage suits have been filed against the Northern Pacific Railway for damages by the big forest fire of August 20-21 in the Cocolalla and Sagle region of this county. One is that of J. W. Holmes, administrator of the estate of James Leetham, who asks $3,000 compensation for losses sustained, and the other that of J. H. Graves, who wants $575. A large number of damage suits running into many thousand dollars have been started against the railway company as a result of the fire, which is alleged to have started by a spark from a passing locomotive. Two cases in which damages were awarded in the district court were recently passed on by the Supreme Court, affirming the verdict of the lower court, so that the company will have to pay all these claims, as the facts are the same in each, with regard to the start of the fire.

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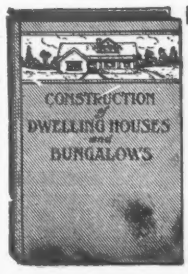

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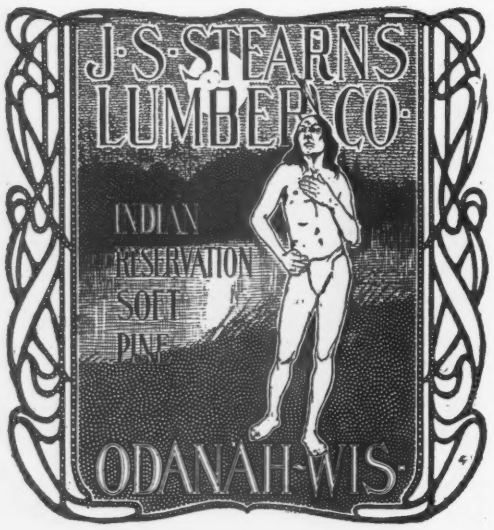

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FLATHEAD VALLEY LUMBER NEWS.

KALISPELL, MONT., Sept. 29.—The volume of business is fairly good and compares favorably with last year. Prices are badly off and probably will be for thirty days or longer. The mills are fairly supplied with orders and are booking some new business, but are not overly eager to take it at the prevailing prices.

Logging operations have been begun by all the larger mills and from all indications the usual amount will be put in this winter, as the mills will clean up all surplus logs by the close of the sawing season. The heaviest operations will be carried on along the Fortine, Stillwater and Swan River districts.

Lands in Flathead and Lincoln Counties belonging to the Anaconda Copper Mining Company, suitable for agriculture or stock raising, will be sold to actual settlers on easy terms. If the land described is adapted to the purpose for which it is wanted the company will not refuse to sell because it is timbered. That the lumber department of the Anaconda Copper Company will at once institute a new policy in the handling of its lands in Flathead and Lincoln Counties was announced by John R. Toole, of Missoula, who was in Kalispell for a short visit last week. Mr. Toole has general charge of the lands of the company, which are generally known as the Big Blackfoot lands, and comprise the greater part of those in the two counties originally held by the Northern Pacific Railway as a land grant from the Government.

R. P. McLaughlin, supervisor of the Blackfeet National Forest, returned last week from the North Fork country, where he has a large crew doing reconnaissance work preparatory to making a large timber sale. He says that the new Government road up the North Fork of the Flathead River is nearing completion and that it will be one of the finest roads in the State. Assistant District Forester J. F. Preston, with headquarters at Missoula, has been in the district on business connected with the forestry department.

Ranger E. J. Jacroux has been assigned to the Flathead national forest and will have charge of the Somers Lumber Company's timber purchases in the Swan Lake district.

W. E. Wells, general manager of the Somers Lumber Company, says that the company will log extensively this winter, chiefly in the Swan River country, where it will establish two or more company camps. Most of its logging operations along the Stillwater River will be done by contract and the company now has several contractors in that section doing the necessary work preparatory for a long winter's operations. They will also put in approximately 12,000,000 feet this winter for the Whitefish plant, which the company expects to operate a full season next year.

A. G. Naundorff, secretary and treasurer of the Eureka Lumber Company, returned last week from a business trip to points in the Dakotas and eastern Montana very optimistic as to the future lumber market in Montana. He is of the opinion that better prices will prevail within the near future. The Eureka company's sawmill is running on a double shift and its shipping department is turning out approximately 3,500,000 to 4,000,000 feet a month.

NORTHWESTERN MONTANA NOTES.

LIBBY, MONT., Sept. 29.—The Montana Pulp & Paper Company, according to Hon. Ed Donlan, president of the company, is preparing to buy the 700,000,000 feet of timber in the Kootenai National Forest that the Government is advertising for sale. Mr. Donlan made this statement to Dorr Skeels, who has charge of the sale for the Forest Service. The company is figuring on building a large pulp and paper mill and also a large sawmill at the mouth of the Yakt River. The timber lies along the Yakt River.

The Anaconda Copper Mining Company is preparing to dispose of the agricultural timberlands that it holds in Lincoln and Flathead Counties. The land will be sold only to actual settlers for homes and easy terms of payment will be given. Most of this land comprised originally the land grant of the Government to the Northern Pacific Railway Company, but which was later purchased by the Anaconda company.

More money was received from timber sales in the Kootenai National Forest during the last fiscal year than from any other forest in the State. One-fourth of the sum received will be returned to Lincoln County for road and school purposes, the amount returned being $12,957.16.

Supervisor W. A. Raymond, of the Kootenai National Forest, has had an interesting display of forest products at the Montana State Fair during the last week. The display includes a large variety of mineral specimens taken from within the forest reserve.

William Hogan, of Troy, who has a contract to get out 100,000 railroad ties for the Great Northern Railway, has purchased a freight motor truck, which will be used in hauling the ties from the timber to the railroad.

CALIFORNIA

FROM THE GOLDEN GATE.

Spurt in Export Business Expected in October—The Fir Situation—Week's Building Up to Average—Many Forest Fires.

SAN FRANCISCO, Sept. 29.—The export fir lumber business is dull. Considerable business has been taken for 1914 delivery, but the prices are too low. A spurt is hoped for in October but there are better prospects for a resumption of heavy offshore trade about March next. Some Australian business is being done at about $10.50 to $11 mill base. The lumber trade with China is still effected by the internal dissensions and foreign complications.

Offshore lumber freights are steady, showing a tendency to strengthen. This, probably, on account of a number of vessels having been taken up recently.

Domestic fir lumber is weak, at about $11 base, delivered San Francisco, and $11.50 southern California ports. The looked-for improvement is overdue but the closing of additional mills in Oregon and Washington is a favorable indication. Fortunately, few random cargoes are arriving as such fir lumber sells as low as $10 to $10.50 base. Twenty-four lumber steamers are tied up and coasting freights remain at $3, San Francisco, and $3.50 south.

The number of building contracts filed for record during the week was thirty-eight, representing a total investment in buildings of $327,000. This is a fair average for local building construction. The list of building permits was swelled this week by the issuing of a construction permit amounting to $900,000, for the Municipal Auditorium which is being built by the exposition company at the Civic Center and which will be presented to the city.

Receipts of lumber by sea at San Francisco during the week ended Saturday, July 19, amounted to a total of 18,000,000 feet. These figures include California redwood as well as fir from Oregon and Washington ports. A slight stiffening in offshore lumber charters is reported.

A number of forest fires have swept thousands of acres of land in Napa and Santa Cruz Counties during the last week or two weeks and only the strenuous efforts of hundreds of fire fighters saved some of the mills and timber lands in the Santa Cruz Mountain districts. While several groves of redwoods were burned and a number of farms were devastated, there was no very heavy damage to merchantable timber.

The Weed Lumber Company is operating on its usual large scale at Weed where large quantities of white pine are worked up into doors and box shook. The veneer factory has been busy this season. The sawmill will continue in operation until snow puts an end to logging.

Cuba, one of the first Nations to accept the invitation of the President of the United States to participate in the Panama-Pacific International Exposition, backed up that acceptance this week when it formally dedicate a site of the exposition grounds for its 1915 pavilion.

H. D. Mortenson, president of the Pelican Bay Lumber Company, has arrived from Klamath Falls and will spend a few days in this city. L. J. Wentworth, of the Portland Lumber Company, has returned to Oregon after visiting A. J. Russell, California agent of his company. D. H. Steinmetz, general manager of the Standard Lumber Company, is in the city conferring with President T. S. Bullock. S. M. Hauptman, of the Hicks-Hauptman Lumber Company, has returned to this city after visiting Portland and other cities in Oregon. E. J. R. King, who has been United States consul at Hokodate, Japan, for many years, arrived from Japan during the week accompanied by Mrs. King. He has been a leader in the Japanese hardwood lumber trade. Ira B. Bennett, head of the Fresno Flume & Lumber Company, is in this city on business.

SAN FRANCISCO, Sept. 29.—Four hundred years ago Vasco Nunez de Balboa, advancing from Darien, first gazed upon the Pacific Ocean. Today on the grounds of the Panama-Pacific International Exposition, Senor Jose Portunedo y Tamayo, special commissioner of the Republic of Cuba to the Panama-Pacific exposition, formally dedicated the site of its national pavilion and was accorded an ovation. The historical sequence of the discovery of America and of the Pacific Ocean was widely commented upon by the speakers. It was upon the island of Cuba that Columbus landed on his first voyage of exploration, October 14, 1492. In honor of the Cuban commissioner the sixth and sixteenth regiments of United States infantry marched before the reviewing stand on the Presidio military reservation, adjoining the exposition site. With the commissioner on the reviewing stand were officials of the Panama-Pacific exposition, United States consuls in San Francisco, visiting diplomats and dignitaries and representatives of the city of San Francisco and the State of California. Preceding the exercises on the Presidio grounds the commissioner was tendered a formal luncheon at the Palace Hotel. Following the review, the commissioner and his hosts visited the site of the Cuban Building, where the dedication exercises were held, concluding with the presentation of a deed to the site of the Cuban Building to the commissioner by President Charles C. Moore, of the exposition.

LOS ANGELES HARBOR LUMBER NOTES.

SAN PEDRO, Sept. 27.—Lumber arrivals here this week were the largest for several weeks, approximately 12,000,000 feet of lumber having been brought into the local harbor. This is nearly 3,000,000 feet more than arrived last week. Monday and Tuesday arrivals were the heaviest. The local lumber companies that received a large share of this lumber were the Hammond, 2,350,000 feet; McCormick, 2,000,000 feet; Southern California, 1,500,000 feet; San Pedro, 800,000 feet, and the E. K. Wood, 400,000 feet. The Southern Pacific Railway received a consignment of ties. The *General Hubbard*, with 1,600,000 feet of lumber, brought the largest consignment.

The American schooner *Americana* has been given up by Lloyds. The vessel was on a voyage from Astoria to Sydney, Australia, with lumber.

After months of consideration the harbor commission has reached an agreement with representatives of the E. K. Wood Lumber Company with reference to the granting of a wharf franchise. The commission decided that the lumber company be given a fifteen-year franchise and notice of sale will be advertised in a few days. The company's holdings are on the west side of the main harbor channel. Under the proposed franchise the company proposes to make extensive improvements and will invest about $50,000.

In compliance with suggestions made by the harbor pilots, the harbor commission has changed the speed limit of vessels in the inner harbor. The new rule will provide for a speed limit of 6 miles instead of four as at present.

AMONG THE NORTHERN REDWOODS.

EUREKA, CAL., Sept. 29.—The camping season, always dreaded by timber owners and at its hight now, is bringing its usual toll of forest fires throughout the State. A fire raging in Mendocino County in the L. E. White Lumber Company's timber on Elk Creek, about fifteen miles back of Greenwood, near what is known as Three Spring Gulch, extends for several miles along the railroad. Eight railroad bridges and trestles have been burned and a large amount of track has been destroyed.

The loss to timber and agriculture around Napa and Santa Rosa has also been very heavy; in the Napa district, where twenty families have been rendered homeless, it is estimated at $75,000. Humboldt County is also getting its share of fires, the largest reported being in the southeastern part of the county, where it is raging in the dry underbrush among the burned over sections of the logged-over tan bark lands. Damage amounting to several hundred dollars resulted from a brush fire that ignited the Stitz Creek trestle on the Pacific Lumber Company's logging road. About 100 yards of the trestle were destroyed, and traffic was stopped for several days. The Pacific people have been especially unfortunate about fires this year. Not long ago their new dry kilns were totally destroyed, and this last week they lost their machine shops at Scotia. General Manager Macdonald is under the impression that this latter fire originated from a spark igniting the roof. The loss is covered by insurance.

No changes are noted in the prices of redwood in any of the markets, with the exception of redwood shingles, which have made an advance. Appearances indicate that within the next thirty days the price of shingles will be considerably firmer.

Humboldt County is enjoying excellent logging weather and all lumber camps are working to the fullest capacity to bring sufficient logs down to the ponds to take care of the winter runs. The mills are sawing heavily on redwood ties, for which the demand just now is heavy. The American schooner *A. F. Coates* cleared recently with 24,627 ties on board, amounting to 788,064 feet board measure and valued at $9,446.77, consigned to Honolulu, and a number of other cargoes of ties are to be loaded shortly.

The British steamer *Manningtry* has cleared for Sydney, Australia, and Auckland, N. Z., having loaded here rough clear redwood and dry redwood doorstock amounting to 1,563,409 feet, valued at $45,594.62, and the local mills have also loaded during the past week the British steamer *Queen Maud*, chartered by the American Trading Company.

Offshore cargoes are being loaded on the barkentine *Mary Winkleman*, bark *Antiope* and schooner *Halcyon*, which arrived in port after being out twenty-four days from Kailua. In addition to these vessels, four tramp steamers are due in port shortly, which will keep the local mills hustling. These are the Norwegian steamer *Terrier*, due to arrive from Nome to load rough clear for the American Trading Company; British steamer *Arrino*, which will take on lumber for Melbourne; British steamer *Harmattan*, due from Valparaiso to load for the American Trading Company, and British steamer *Largo Law*, chartered by A. F. Thane & Co., which will come to this port to load for Melbourne after completing discharge in San Francisco.

Local lumbermen and friends of the deceased have been much shocked by the death of Earl S. Hicks in San Francisco. Mr. Hicks is well known here through his connection with the Metropolitan Redwood Lumber Company.

AT THE SOUTHERN CALIFORNIA METROPOLIS.

LOS ANGELES, CAL., Sept. 29.—Lumber conditions are improving slowly. Smaller inland towns near Los Angeles show prospects of more building. Beach towns have increased their building operations to a marked degree, the cities along the coast making records in this line that have not been exceeded in their history. San Diego has slowed up in its demand for lumber. This is partly due to the troubled conditions in Mexico, whence many mining timbers are shipped from San Diego. Local lumber concerns have reported the same conditions in regard to mining timbers, saying that the revolution has caused a cessation of mining. One company that had a standing order for 1,000,000 monthly recently was notified of the cancellation of the order. Another reason for the prevailing conditions here is that little lumber has been shipped to Arizona and New Mexico for some time, there seeming to be no demand there whatsoever.

The Alta Planing Mill Company, which is now constructing nine buildings of the State Normal School in this city, was also the lowest bidder at about $43,000 for the erection of the fine arts building. The Alta Planing Mill Company has also been awarded the erection of the Southern Pacific Arcade Station.

Report was recently published that the California Lumber Company, of Loyalton, had been succeeded by T. Squires, which is an error. The California Lumber Company is owned and operated by A. F. Dodge, who is president and superintendent. The company has had a successful year, having cut more than 30,000 feet of lumber daily, shipping as fast as the lumber was marketable. It has no difficulty in finding a ready market for its material.

CANADIAN TRADE NEWS

IN SOUTHWESTERN BRITISH COLUMBIA.

Interior Timber Owners to Amend Suggestions on Increase of Timber Royalties—Report of Firewarden Shows Small Number of Fires.

VANCOUVER, B. C., Sept. 29.—Timber owners and lumbermen in the interior of the Province have amendments to propose to the suggestions made by the Coast lumbermen regarding the increase of royalties on timber. The interior men indorse the schedule of increases as suggested, but they contend that if such a system is put in force the identical royalties should be payable, grade for grade, on mountain and Coast timber. They are also of the opinion that No. 3 logs should bear no increase during the entire period. If the decision of the government is against grading logs for royalty purposes then it is suggested that owing to the inferiority of mountain timber as compared to Coast timber, and owing to the very unjust inequality now existing in the matter of ground rentals and fire guarding charges, mountain timber should be required to pay royalty on the basis of one-third less of that chargeable upon Coast timber. The mountain men further believe that the royalties should be fixed for a period of thirty years, instead of twenty, and that ground rent should be decreased.

The method of scaling logs has also been criticised by the Coast millmen, but interior manufacturers are strenuously opposed to the adoption of the Coast scale on timber east of the mountains, as they contend it is impossible to cut out the scale. They favor the continuation of the Doyle scale.

The report of the chief firewarden for the season shows that out of 600 fires, only 95 entailed expense. The cost of fire protective work, however, ran as high as $47,000 a month, while the patrol alone for the season amounted to $200,000. The summer has been wet, which was the chief reason that few fires became dangerous. To put out the 95 mentioned cost $4,500. The aggregate area of green timber burned over was less than fifteen square miles.

A curious deadlock has arisen over the recent arbitration between the city of Vancouver and the Vancouver Lumber Company, in which the company claimed $519,000 for alleged damages to its property as a result of the building of the Connaught bridge. Although the award has been ready since September 9, being filed in the supreme court, neither party has yet shown any inclination to pay the costs and find out the award. The city, of course, is in no hurry to find out the award as it has nothing to gain. Before the award can be lifted the costs, amounting to $5,000, have to be paid by the party lifting the award out of the care of the registrar.

The question of export has come recently owing to the recent case before the courts, and the impression seems to prevail that cedar poles can not be exported. This timber can be sent out of the Province if an order-in-council is first obtained, and this is given whenever application is made. There is an export tax of one-half cent per lineal foot on all cedar poles exported.

AT ONTARIO'S METROPOLIS.

TORONTO, ONT., Sept. 29.—The lumber trade is participating in the general revival of business activity due to the heavy western harvest and the improvement in financial conditions. Building is active and likely to continue so until late in the season, with a brisk demand for lumber especially of the medium and lower grades. White pine strips and mill culls are in requisition. Red pine is moving slowly. Americans are buying largely in view of the speedy adoption of the tariff bill, shipments being held back in the meantime. The English market is improving. On the whole there is a general feeling of confidence and no disposition toward lower prices.

FROM THE CANADIAN CAPITAL.

Railways to Extend Cartage Service—Ontario Claims Most Valuable Pine Forests—Lumbermen Consider Season Unsatisfactory.

OTTAWA, ONT., Oct. 2.—The Canadian railways have definitely agreed to extend their cartage service until January 1 to take care of the heavy fall trade. It will be done at an increase of half a cent a hundred pounds. An order has been issued by the Railway Commission of Canada authorizing the increase and detailing the steps the board took as mediator between the transportation interests and the shippers. Cartage formerly performed by the railways for 2½ cents a hundred pounds will be done from now on for 3 cents. While this arrangement has been made till January 1 only there is every probability, as already announced, that it will be made permanent after it has been given a trial.

The Ontario Government has just issued a handbook of Ontario resources which claims for Ontario the most valuable pine forests on the Continent. "The forest wealth of the Province," it states, "is an asset that must not be overlooked. The forest area of Ontario, not counting Patricia, the newly added district, which alone has 100,000 square miles, is the most valuable on the Continent of America. The quantity of pine still standing on licensed lands is estimated at 7,000,000,000 feet and on unlicensed lands 13,500,000,000. The total revenue of the Province from woods and forests in 1912 was $1,985,662."

Chairman H. L. Drayton, of the Dominion Railway Commission, has returned from England, where he was absent a month taking up with the British authorities the question of establishing joint control of ocean rates, which is of interest to lumbermen because of recent substantial increases in the rates on timber. Although Chairman Drayton's report has not been made public it is understood to provide for the establishment of a joint tribunal by the Canadian and British Governments for ocean rate control.

Local lumbermen are beginning to complain that this has been a poor season for them. Uncertainty regarding the American tariff retarded the export trade to the United States during the summer months to such an extent that not a single lumber-loaded barge was to be seen on the Rideau Canal or Ottawa River; then came the forest fires of a few months ago which burned parts of valuable limits owned by Ottawa firms; next several local fires caused hundreds of thousands of dollars' damage to several companies, including Shepard & Morse and J. R. Booth. Now comes the loss and inconvenience caused to exporters by the labor troubles prevalent in Great Britain and Ireland.

Spruce trees 6 feet in diameter on the fringe of the Arctic Circle is the lumber news brought down from Canada's Far North by Henry A. Conroy, inspector of Indian agencies, who has just returned from an inspection tour. "There is a fringe of good timber, mostly spruce, in view all the way along the Liard River to its junction with the Nelson," stated Mr. Conroy. "Then on the Nelson there is also good timber. And when you get into the foothills you see the finest kind of spruce. Some of it will go 5 or 6 feet across the stumps, the biggest spruce I have ever seen. This is on the British Columbia side of the boundary."

IN SOUTHEASTERN CANADA.

MONTREAL, QUE., Sept. 29.—The Dominion Government report on lumber for 1912 has just been made public. It shows that the production for the year was 4,389,723,000 feet, valued at $69,475,784, a decrease of 10.7 percent as compared with 1911. Ontario had a cut of 1,385,186,000 feet, valued at $26,774,937; British Columbia is second with 1,313,792,000 feet, valued at $17,738,836; Quebec next with 677,215,000 feet, valued at $10,683,262, and New Brunswick fourth with 449,738,000 feet, valued at $6,042,533. Spruce was the most valuable timber, the cut being valued at $20,378,853. The white pine cut was second in value, being $19,119,694.

A much complete report on the lumbering industry of the country, and one which is equally authoritative, appeared last week in the Montreal *Journal of Commerce* by Roy L. Campbell, of the Dominion Forestry Department. Mr. Campbell shows by tables and diagrams the extent and growth of the lumbering industry in this country. In 1870, Canada exported $21,533,000 worth of lumber. Ten years later this decreased to $16,854,000. In 1890 it amounted to $26,000,000; in 1900 to $29,600,000; in 1910 to $47,517,000, and last year to $40,892,000. In 1871, the total value of the forest products was $41,000,000, while in 1911, the value of the products increased to $184,630,000. The capital invested in the industry increased in the same time from $20,588,000 to $259,889,000. Another interesting fact brought out in his article has to do with the kind of timber exported. In 1875, Canada exported $6,593,000 worth of square timber out of total forest exports of $25,000,000. Last year, the square timber exported amounted to but $1,268,000. Lumber exports increased from $16,000,000 in 1875 to $32,000,000 last year. Other valuable information relating to the lumbering industry in Canada is also contained in the article.

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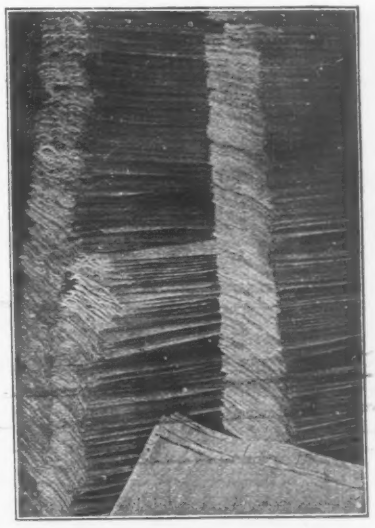

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CENTRAL SOUTH SITUATION

CRESCENT CITY NEWS.

Cypress and Hardwoods Improving—Increasing Use of Cypress Ties—Railroad Exploitation of Silos—Adverse Weather Much in Evidence.

NEW ORLEANS, LA., Sept. 29.—Cypress is finding steady call in mixed-carlots, and prices are very steady. Yellow pine reports are mixed. It is admitted, however, that the situation is unsatisfactory. Hardwood market conditions resemble those of cypress more closely than of yellow pine. Car shortage develops slowly. Mills on the Southern Pacific are having some trouble on this score, but no very serious inconvenience is reported as yet. Bad weather has interfered with logging operations in some parts of Louisiana and Mississippi, and heavy rains occurred the latter part of the week over south Louisiana. A baby cyclone, passing over Jeanerette September 26, wrecked one of the lumber sheds of the Jeanerette Lumber & Shingle Company.

A strike on the shipyards of the Alabama-New Orleans Transportation Company, on the Lake Borgne Canal, shut down that plant last Thursday. About 300 men, led by their foremen, quit work following the discharge of several of their fellows who were charged with "loafing."

Fire in the building of the H. W. Johns-Manville Company's building at Gravier and Magazine, early last Wednesday morning, resulted in a damage of between $40,000 and $50,000 to stock and possibly as much more to the building. Manager George A. Schmidt at once telegraphed the company's factories for rush shipments to replace the damaged stock, and declares that the fire has not interrupted the business of the New Orleans branch.

Advices from Gulfport, Miss., state that the Gulf & Ship Island Railroad is purchasing cypress crossties to replace the pine ties, as they wear out, on its Gulfport-Hattiesburg division. About 9,000 cypress ties, it is said, have already been ordered and delivered by barge from the Louisiana mills, and orders for more will be placed as they are needed.

The New Orleans Great Northern Railroad started a "silo demonstration train" out of Jackson, Miss., its northern terminus, this morning, under charge of H. E. Blakeslee, Mississippi's agricultural commissioner. The train will make stops at practically all the stations along the line to demonstrate the use and value of silos to the farmers. Lumbermen naturally are taking active interest in the movement, which will increase the local demand for their product.

Sale of another "ready-made" town is reported from McComb City, Miss., where the J. J. White Lumber Company has recently disposed of its holdings in South McComb to Messrs. F. B. and Thad Lampton and H. B. Holmes. The property involved comprises 100 acres of ground, with 150 cottages and other buildings, including churches and schools. The White company closed its mill at McComb several months ago after a continuous operation of many years, and transferred its activities to Columbia, where it has built a larger and thoroughly modern plant. Most of its employees have gone to Columbia.

IN NORTHWESTERN LOUISIANA.

SHREVEPORT, LA., Sept. 29.—During the last several days in northwestern Louisiana, eastern and southern Texas and parts of Arkansas lumber operations have been heavily curtailed owing to unprecedented rains. Most of the big mills in the Shreveport territory have been closed for three days, according to reports in the local circles, while small mills have been still less active. The bulk of the planers has been out of commission. If the rains subside operations may be resumed the first of next week, though some mills no doubt will still have trouble securing logs. Since last Thursday the rainfall at Shreveport has aggregated almost 9 inches. During the month it has totaled 15.82 inches, which smashes all monthly records since a branch of the Weather Bureau was established here in 1871. The nearest approach to it was in December, 1884, when the precipitation totaled 15.55 inches. Although the rains have caused many of the milling operations to be suspended, they have at the same time given cause for encouragement, for shipping has been largely curtailed, stocks reduced, and strength added to the market.

Strength already has been added to the market in general demand, although the railways have not bought in much volume. However, the prices have remained unsatisfactory, though slashing has ceased and some manufacturers have begun asking more for their stock.

The cotton crop, the main crop in this territory, has been damaged considerably by the rains, but if fair weather sets in soon, the bulk of the staple will be picked. The improved price will offset much of the loss in quantity.

All business men in this territory are interested in the arrival in Shreveport, for handling by banks here, of $475,000 to be used in movement of the cotton crop. Only $25,000 more is due here, the total allotted to Shreveport having been $500,000. Its distribution promises to help business generally in this section.

The brief to be filed by the carriers in regard to the uniform mileage freight rate case, in which uniform mileage rates between all points in Louisiana are proposed, is receiving attention. The Louisiana General Freight Agents' Association recently held a conference at Alexandria to discuss the brief. The case will be considered by the State railroad commission when the briefs by the railways and the commercial organizations are filed, probably some months yet.

Gov. L. E. Hall has issued a proclamation designating October 9 as Fire Prevention Day in Louisiana. He urges all citizens to clean off trash and otherwise reduce fire risks on that date.

SOUTHWESTERN LOUISIANA LUMBER NEWS.

LAKE CHARLES, LA., Sept. 30.—Demand is hardly up to that of this time last month, and while many are of the opinion that the market is sure to improve from this time on others believe that the dull season will last for several weeks. Lake Charles mills are still operating full time and most of them claim to be doing a real good business. On the other hand many of the large manufacturers who have mills up the Kansas City Southern and Iron Mountain, say that business has been unusually dull during the last two weeks. Export business has not been up to what was anticipated. Export agents who have been here from Galveston, Houston, Beaumont, Port Arthur and other points say that the increased demand that was expected has so far failed to materialize.

Reports from the cypress district are unusually encouraging, owing to the fact that the rains of the last thirty days have flooded all of the swamps and cypress logging is now at its hight.

Lumbermen in this section are more or less interested in the arrest of Charles Cline, on the Texas border, charged with being one of the gang of smugglers who have been sending arms to the revolutionists. Cline was one of the five men waited upon by the citizens of Merryville and given hours to leave town when the strike was declared against the American Lumber Company following the Grabow riots. Cline went from Merryville to DeKidder and was not heard from again by the labor leaders of this section until he was arrested charged with smuggling to the revolutionists in Mexico.

Colonel S. T. Woodring, accompanied by Mrs. Woodring, is to leave today for Boston, where Mr. Woodring will represent the Calcasieu National Bank of this city at the American Bankers' Association convention. Colonel Woodring and Mrs. Woodring will make an extended tour of the North and East following the convention. They expect to return to Lake Charles in October. During the absence of Colonel Woodring the big plant of the Calcasieu Long Leaf Lumber Company here will be under the management of James G. Graye, the assistant manager.

Mr. and Mrs. H. J. Lutcher Stark will leave Orange this week for Austin, where they will spend the early winter.

Continued rains have been responsible for many of the mills in southwestern Louisiana closing temporarily. The Beatrice Lumber Company, at Lemonville, 20 miles from Lake Charles and just across the Texas line, was among the first of the mills to close.

The Lutcher & Moore Lumber Company has just let the contract to Weaver & Son, of Galveston, for a 75-horse power boat to be used for towing purposes on the Sabine River.

A MISSISSIPPI LUMBER CENTER.

MERIDIAN, MISS., Sept. 29.—The market situation and lumber movement show no improvement and lumbermen view the prospects with some pessimism. Prices continue to show weakness, with little demand for anything. No improvement in the near future is looked for. Lumbermen point out that a new season is just opening and the situation is anything but satisfactory. No orders of any kind, except for a few job lots, are being received.

The car situation would probably be tight were many cars in demand. The crop movement is in full swing both west and south, but this does not affect the situation, as the lumbermen have no interest in cars when they have no orders for material with which to load them. Dull business has caused considerable complaint and mills running on short time have closed down.

Hardwood continues to hold steady, with brisk business reported by exporters. Oak and ash are selling well. Gum is slow, hickory in fair demand.

The sawmill of the Tartt Lumber Company, at Lauderdale station, has been closed down. Timber in that section has all been cut. The mill will be reërected at another point not yet determined. The company has in operation a mill at Montgomery.

MATTERS AT MOBILE.

MOBILE, ALA., Sept. 29.—Notwithstanding the continuance of the strike of longshoremen, the last week has been a very active one, and ship agents and stevedores are of the opinion that there has been no delay occasioned in the loading of vessels by reason of the strike. The outward movement of yellow pine was practically double what it was the previous week, and a number of large cargoes went forward, including 1,786,000 feet to Rio, 1,202,000 feet to Genoa, Italy, and two parcels in the same vessel—one of 920,000 feet for Antwerp and the other 598,000 feet for Hamburg. The aggregate of the week's outward movement, all lumber except one parcel shipment of sawn timber, reached 5,727,000 feet. The only shipment of sawn timber amounted to 453,000 feet and went to Antwerp. In addition to the yellow pine movement 22,100 feet of poplar logs went to Hamburg and 13,250 feet of ash lumber to Buenos Aires.

In the sawn timber trade the market is quiet, and there are no inquiries from abroad. The market is quoted at 23 to 24 cents for 30-foot average, having dropped slightly within the last fortnight. There is no trading, and while the outward movement for the last month has been light, the probability is that for the next thirty days it will be still lighter.

The outward movement to South American ports during the week was practically 2,500,000 feet—the largest movement that has gone forward in that direction in many weeks. There is a slight strengthening in the interior trade; only one small cargo—518,000 feet—went to Cuba.

SOUTHERN ARKANSAS NOTES.

WARREN, ARK., Sept. 29.—The market situation is not very encouraging from a manufacturer's standpoint. Retail stocks are lower than ever before at this season of the year, but most dealers continue the hand-to-mouth policy of buying, refusing to stock up. This, of course, keeps prices on a low ebb, and as long as shipments are moving promptly the retailers will not change their policy.

With the tariff and money questions practically disposed of, and money easy, there should be an increase in building operations, and some of the manufacturers look for a fair demand after October 15. The probabilities are when cotton begins to move in volume the southern mills will have difficulty obtaining equipment for lumber loading if there is a normal demand in October and November.

Stocks are badly broken, and considerable complaint is coming from the retailers of slow shipments. The fault largely is with the retailer for not carrying a stock adequate for his requirements.

B. E. Halpin, secretary and assistant manager of the Stout Lumber Company, Thornton, has returned from a vacation in the North.

Timber, mostly hardwoods, exists in fairly large quantities in certain sections of the coastal plain and near the northwestern frontier of Salvador, says Consul-General Thomas Hinckley, who resides at San Salvador. Generally speaking, the lumber resources are limited, owing to the density of population and large local consumption.

LUMBER NEWS OF THE GREAT SOUTHWEST

AN EAST TEXAS LUMBER CENTER.

General Rains Hamper Manufacturing and May Curtail Output—October Trade Regarded Hopefully—Railroad and Export Demand Still Dormant.

HOUSTON, TEX., Sept. 29.—Last week, and especially the last three or four days, rain in unprecedented quantities has fallen throughout Texas and Louisiana and the entire sawmill district has been thoroughly drenched. Reports from many points in Texas indicate that the rains have caused heavy damage to the cotton crop, still further reducing the probable yield but at the same time causing an advance in the cotton market that is giving the farmers considerably more money for the cotton they have to dispose of than they would have received otherwise. In the wheat growing sections farmers are jubilant over the rainfall, as they are assured of a good season, while on the cattle ranges joy is unconfined because of a certainty of an abundance of water and plenty of grass. But some of the rice growing sections report that only the tops of the stacks can be seen in fields where the rice has been cut and shocked, while in fields in which the reapers and binders have not entered there is so much water as to stop harvesting. The rains of the last two days have been especially disastrous in some sections of the Louisiana yellow pine district. A telegram received here today from L. J. Boykin, general manager of the Chicago Lumber & Coal Company of Texas, sent from Fullerton, La., states that he is marooned there and can not get out, the Santa Fe, Kansas City Southern and Lake Charles Northern Railroads all having suffered washouts and interruptions of traffic. Mr. Boykin's telegram added that the log ponds at various mills had gone out under pressure of the flood and that only by the most strenuous effort of the crew was the pond saved at the big mill of the Gulf Lumber Company at Fullerton. As a result of these heavy rains a number of mills are expected to close down for a time —which will not be altogether a bad thing, as the one thing needed above all else just now is a curtailment of production, no matter if it is an enforced curtailment. Throughout East Texas and North Louisiana the rains have been general, and for several days last week mills were closed down. Undoubtedly shipments of lumber for September will be perceptibly reduced because of inclement weather.

Stocks and Demand.

Sales managers pretty generally report market conditions practically the same as they have been for several weeks. One sales manager said: "Well, conditions are no worse than they were." Some comfort is to be derived from that, for if conditions have grown no worse and there is no such thing as absolute stagnation or stillness there must naturally be some improvement. A notable feature of the situation is that stocks of dimension at the mills are badly broken, and practically all items of No. 1 and No. 2 dimension are in short supply except 2 by 6. The fact that stocks are so badly broken makes difficult for sales managers the filling of requirements for straight cars of any certain lengths or sizes and as a result there is a more hopeful tone to the market on dimension.

Some mill offices report a better inquiry within the last few days and are really looking for an improvement in the situation during October. Already improvement in demand from northern or northwestern territory is noticeable. Iowa and Indiana territory are providing some nice business for mills in the Texas-Louisiana yellow pine belt and this demand is expected to become active during the next few weeks.

Railroad and Export Business.

Demand for railroad material is still very sluggish, though an occasional schedule is placed that helps to keep things going. The heaviest purchaser of yellow pine construction material recently has been the St. Louis & San Francisco Railroad, it having placed some nice orders for timbers, sills etc., with mills in this territory. The Santa Fe has been a continual buyer and the recent rains are expected to bring about a demand for a lot of bridge and track material to repair the damage done by washouts at various places. A general belief is that the eastern railroads will soon begin to come into the market for good sized schedules and, in fact, conditions in the East seem more encouraging than in any other part of the country. B. F. Bonner, vice president and general manager of the Kirby Lumber Company, just returned from an extended visit in the East, reports a distinctly better feeling in New York and in the East than was apparent thirty days ago and looks for a revival of trade generally that will result to the advantage of the lumbermen. He found a better feeling in financial circles and in industrial circles and he is looking for a big demand from eastern consumers for yellow pine within the next few months.

The export situation is not altogether satisfactory. Demand has been fairly active recently, but values are much too low from the standpoint of the manufacturer and as yet he has been unable to hoist them to any perceptible extent. Temporary appearances were that the export trade would soon regain its former vigor, but it has not responded as rapidly as had been hoped. The most active inquiry is for 3 by 9 and 3 by 11 deals and manufacturers who can supply these promptly have been able to book some nice orders. One buyer in the market this week for 200,000 feet of 3 by 9 Rio deals for delivery in thirty days had considerable difficulty in placing the schedule, by reason of the early delivery required. Sawn timber, that gave promise a fortnight ago of decided improvement, has lost ground within that time and business that was offered then at $19 for 30-cubic average has sagged down to $18.25, a figure altogether unsatisfactory and unprofitable to the manufacturer. There has been some inquiry during the last week for 40-cubic average and over, but buyers find difficulty in placing specifications of this kind, because it requires the choicest timber to bring up that average and for that timber the manufacturer requires a price considerably higher than for smaller timber. During the last few days three well known export lumber buyers have been in Houston, these being E. R. McInnis, manager of the Beaumont office of the Standard Export Company; A. Milch, manager Beaumont office of H. Forchheimer, and Pickett Jones, also doing an export business with headquarters in Beaumont.

General and Personal.

There has been a renewed demand for silo stock in this territory, at least one big buyer having called on the manufacturers in Houston last week, offering some good sized schedules and trying to get some manufacturers to embark in the manufacture of silo stock who have not hitherto given any attention to that line. James R. Martin, vice president of the Western Silo Company, of Des Moines, Iowa, was here for a day or two interviewing lumbermen. His company expects to put in a plant in northern Louisiana to manufacture silos.

Roy Campbell, of the City Lumber Company, Temple, Tex., was a visitor to Houston last week. He deplores the fact that the lumber market is so badly disorganized and said that if the manufacturers would advance prices 50 cents to $1 the dealers would immediately begin buying. He said that yards generally in his territory could each take from eighteen to twenty cars of lumber, but they don't care to buy on a market that is so uncertain that they can't tell whether the price made today is as low as the price that will be made tomorrow. Mr. Campbell looks for good fall business in the Temple territory, from which section unusually large shipments of grain have been made this year, while cotton is bringing a good price and farmers have an abundance of money.

Visitors to Houston during the week were W. C. Trout, manager of the Lufkin Foundry & Machinery Company, and S. M. Morris, manager of the Lufkin Land & Lumber Company, both accompanied by their wives. Mr. Trout reports business with his company in excellent shape and is looking for a prosperous fall and winter season.

J. M. Simmons, assistant sales manager and traffic manager of the South Texas Lumber Company, made a short trip up to north Texas this week and reported the whole country practically a sea of water between Houston and Dallas.

Alexander Thompson, manager of the Texas Long Leaf Lumber Company's mill at New Willard, spent a couple of days in Houston during the week going over matters with the sales department. He reports a nice lot of orders for railroad material and has about all the special cutting he cares to take on at this time.

John W. Chandler, general sales manager of the Kirby Lumber Company, who has been spending the last six weeks at his old home in Virginia recuperating from an attack of illness, has recovered his usual good health and has started back home. During his absence the affairs of the sales department have been ably managed by Harry Kendall.

A BIG EAST TEXAS MILL POINT.

BEAUMONT, TEX., Sept. 29.—Excessive rains last week caused farmers, especially growers of rice, to entertain grave apprehensions as to the probable effects on the crops. Growers of Honduras rice especially are anxious, for not in years have the cutting and threshing of this crop been so late as they are this season. Last year at this time about 90 percent of the Honduras crop had been delivered, but up to this time scarcely 10 percent of it has been sold. In the vicinity of Bay City and El Campo, Tex., where the Honduras staple is principally grown, not 10 percent of the crop has been threshed, according to a statement just issued by General Manager E. E. Eignus, of the Southern Rice Growers' Association. The cotton crop throughout Texas has been damaged materially and cotton picking has been discontinued for the time being. Fear is entertained that truck farmers also will suffer heavy losses on account of the excessive rains.

The lumber business in this section last week was thoroughly inactive and market conditions decidedly have shown no improvement, prices remaining practically unchanged, with possibly a slight decline on some items. Excessive, continuous rains have fallen throughout the timber belt since last Thursday and practically all the mills have shut down on account of inability to log successfully. With winter approaching rapidly and with no lumber being manufactured wholesalers are inclined to look favorably on the situation, regardless of the fact that demand has decreased rather than increased since September 1.

Retailers report a steady increase in local business, but exporters are doing very little. Small shipments have been floated down the Neches River to Port Arthur to be loaded for export, but aside from these business has been at a standstill.

Both manufacturers and wholesalers believe that the increasing retail trade will shortly begin to show its effects on the other branches of the industry, and a decided improvement in the market is expected by October 1, or October 10 at the latest.

The Smyth Lumber Company at noon today formally acquired the local furniture, sash and door factory of the Page Manufacturing Company, and while the exact figure was not made public it is understood that the consideration was $10,000. The new owner will generally overhaul and remodel the plant, adding considerable new machinery and increasing the capacity of the factory. When completed the plant will give employment to twenty men.

The Queen City Lumber Company, which recently organized and took over the Beaumont Column Factory south of the city, has begun operation of the plant and is manufacturing all kinds of hardwood lumber, shingles and columns.

IN THE MISSOURI-KANSAS DISTRICT.

KANSAS CITY, MO., Sept. 30.—More orders from the country yards and a general demand for prompt shipments are the features of the last week's lumber trade in this territory. Dealers need stock in a hurry to meet the current demand. At the same time shipments are delayed by heavy rains at the mills and by the car shortage, which is being felt somewhat more here. Stocks in all woods are very low at the yards and if the demand shows any considerable improvement a strong rush for stock that will have a stiffening effect on the markets throughout will result. The feeling among the farmers and in country towns is much more optimistic than it was two weeks ago and there is an increasing prospect of a fair fall business in much of Kansas and Missouri. September has brought an unusually large amount of rain and that has gone a long way toward wiping out the bad effects of the drouth. The last week there have been good rains in Kansas, Oklahoma and Missouri and the ground could not be in better condition for fall seeding.

The W. R. Pickering Lumber Company's new mill at Haslam, Tex., is to be ready for operation by November 1, according to an announcement made at the company's headquarters here this week. The plant is equipped with

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Steele & Hibbard Lumber Co.
WHOLESALE
HARDWOODS AND MAHOGANY

American Forest Co.
CAPITAL STOCK $650,000
Manufacturers of
Oak, Ash, Gum, Cypress, Elm
We manufacture and Sell Our Own Stock Exclusively.
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Specialty: — Cypress, Poplar, Ash, Oak.

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HARDWOOD LUMBER
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Our Mills Produce
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to draw from all the time the whole year round. We are always striving to render the best of service all along the line, **and our Salaried Salesmen Receive Credit for Mail Orders.** May we serve You?

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Dressed Yellow Pine and Cypress and Shingles

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Manufacturers and Wholesalers of all kinds of

SOUTHERN LUMBER TIES, BRIDGE TIMBERS PILING and POLES.

Equipped for Treatment of Lumber with Various Processes.

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White and Red Oak, Ash, Red Gum, Cypress and Elm.

The Kingston Car Door Roller, $4.50

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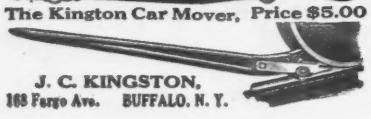

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two 14-inch bands. It will have a capacity of 125,000 feet daily. A billion feet of the finest shortleaf stumpage adjacent to the new plant is owned by the company. The timber is in St. Augustine, Shelby and Sabine Counties. C. L. Brooks, who has been superintendent at the Pickering plant at Barham, La., is to have charge of the new mill. Mr. Brooks has been in the service of the company fourteen years and is regarded as one of the most thorough mill men in the business. W. A. Pickering, vice president and general manager of the company, is on an inspection trip at Haslam and the concern's other mills in the South.

The silo gospel has reached Texas and lumbermen in that State are looking to Kansas City for pointers on how to meet the new demand. I. T. Butler, manager of the retail yards of the W. H. Norris Lumber Company, Houston, spent several days here last week studying silos and investigating as to the best stock for use in their construction. He says the demand for silos is growing rapidly.

R. A. Long, president of the Long-Bell Lumber Company, has returned from several weeks in Glenwood Springs, Colo. C. B. Sweet, vice president of the company, has returned from Portland, Ore., where he went on a business and pleasure trip. He was at the Coast city three weeks.

K. S. Duncan, president of the Duncan Shingle & Lumber Company, returned today from a month on the west Coast and reports general dissatisfaction among mill men with the present price of shingles. He notes a growing tendency to curtail production unless there is an immediate improvement in the market.

Herman Dierks, president of the Dierks Lumber & Coal Company, returned the latter part of last week from Germany. Mr. Dierks and his son and daughter left for Germany June 1 and did most of their traveling in that country. Mr. Dierks took special interest in the German methods in the lumber industry.

W. E. Lowery, representative of the Pawnee Land & Lumber Company in Kansas City, has removed to Alexandria, La., where he will continue in the lumber work.

Harry Marrs, of Des Moines, Iowa, representing the Old Oregon Lumber Company, spent several days here the latter part of last week.

C. E. Lemons, of Moberly, Mo., was here Thursday on business for the Chicago Lumber & Coal Company.

Frank J. Shields, of Mosher & Shields, St. Louis, was here last Monday on business and renewing old acquaintances.

B. S. Deatherage, assistant secretary of the Southwestern Lumbermen's Association, attended the meeting of the North Central Missouri Retail Lumber Dealers' Association in Moberly last Saturday night. Harry Gorsuch, secretary of the Southwestern association, has just returned from Shreveport, La., where he attended a hearing of the protest against a proposed increase in Santa Fe freight rates on shipments of lumber not originating on the Santa Fe lines.

Thor Sanborn, of the Grays Harbor Commercial Company, is back from a trip to Buffalo, Detroit and Chicago.

E. Horn, of the E. Horn Company, sash and door maker in Topeka, Kan., and O. E. Jones, of Jones & Wilhite, Green City, Mo., were among the Kansas City callers last week.

IN THE MIDDLE MISSISSIPPI VALLEY.

ST. LOUIS, MO., Sept. 30.—Yellow pine wholesalers and manufacturers are feeling much better over the situation than they did. A steady volume of trade is coming in. The only thing that is making them a bit nervous is the threatened car shortage. But for this they believe there would be an increasing business. The retailers and line yards, however, are beginning to place their orders early in order that stock may be gotten out as soon as possible, because they believe building operation, as well as repairing, will be rather active this fall and they want as good stocks on hand as they can get. The railroads are doing all they can to hasten shipments, but some roads find difficulty in getting all the cars they require for their customers.

A. J. Niemeyer, president of the A. J. Niemeyer Lumber Company, Little Rock, Ark., arrived Monday morning from Pasadena, Cal., where he now makes his home, and left the same evening for Chicago. Frank Niemeyer, manager of the mills at Little Rock, was in St Louis on Monday.

Frank J. Riefling, sales manager of the George W. Miller Timber & Lumber Company, says the recent heavy rains have been handicapping logging operations at the mills. It has been almost impossible to log and the company's output has naturally been curtailed. Business at the office in St. Louis, however, has been good. Outside of the water trouble the company is operating all right and is getting out shipments in good time.

George R. Hogg, president of the Hogg-Harris Lumber Company, says it is doing a seasonable amount of business and at prices satisfactory to both the buyer and shipper. Shipments are being gotten out with little or no delay.

A. G. Mucke, sales manager of the Grayson-McLeod Lumber Company, reports a pretty good volume of business. Inquiries are coming in very freely, indicating that numerous lineyards and retailers want lumber and are in the market, and Mr. Mucke says good orders will result from many of these inquiries.

R. E. Bramlette, of Gallion, La., a yellow pine manufacturer, was in St. Louis the first part of the week.

J. A. Meyer, sales manager of the Consolidated Saw Mills Company, reports a fair demand for yellow pine. Shipments have slowed up somewhat during the last few days, on account of rains at the mills. The market is getting stronger and the prospects are good for a better trade before many days.

E. C. Robinson, of the E. C. Robinson Lumber Company, received word from the governor of Missouri on Tuesday that he had been appointed a delegate from Missouri to the International Dry Farming Congress, the International Conference of Agricultural Colleges, and the International Congress of Farm Women, all of which will meet at the Soil Products Exposition to open at Tulsa, Okla., October 22 and continue until November 1.

FROM SOUTH ATLANTIC LUMBER CENTERS

IN NORTHEASTERN FLORIDA.

JACKSONVILLE, FLA., Sept. 27.—There seems to be an undercurrent of feeling among wholesalers that the lumber situation is slightly better, as the mills that are running seem to have a slightly better variety of cutting, although prices show no signs of improvement. Some of the brokers state they are now getting better deliveries on their orders than at any other time in the past, and orders placed for 30 to 45 days' delivery are being shipped in three weeks, showing that there is no great accumulation of orders on their books.

The retail trade in this city has improved in the last two weeks and by the end of the next fortnight it is expected that building operations will be resumed actively, as architects and contractors have plans in hand for a large number of dwellings, stores, etc. As the demand increases price-cutting will cease to a great extent: at least to the extent to which it is being carried on at present.

S. K. Brown, of this city, vice president and general manager of the American Tie & Timber Company, sailed for Europe on the *Imperator* and expects to spend some time in Germany, France and Austria, investigating the methods of forest preservation and reforestation employed in those countries, with a view of reforesting the company's large areas in southern Georgia. This company operates in Georgia and Florida and is about the largest shipper of ties in this section. At present it is loading a steamship with 40,000 ties.

SOUTHEASTERN COASTWISE TRADE.

SAVANNAH, GA., Sept. 29.—Business is more apathetic than it has been in years. There appears to be no active demand and prospects for immediate improvement do not seem bright. Sales have fallen off rapidly in the last several months and trade depression is general. Crossties are in fairly active demand. Railroad improvements and extensions are still in full swing. On the other hand, call is light for general building material and but little building is going on in the Southeast—all in strong contrast to the activity in evidence during the fall of previous years. Dealers look for resumption of business after the Christmas holidays; restoration to normal conditions is hardly expected previous to that. A steady volume of business is moving, but it is small in comparison with earlier months and is mostly in fulfillment of old orders.

Savannah dealers, through the suit of James M. Dixon & Co., have won another victory over the Merchants & Miners' Transportation Company, under the terms of a sweeping injunction secured against that corporation requiring it to accept the lumber offered for shipment at Savannah before taking on any offered at Jacksonville, the southern terminus of the line. The transportation company has been cited to show cause why the injunction should not be made permanent on the 20th of the present month.

It is alleged that the Merchants & Miners' has been discriminating against Savannah in favor of Jacksonville on lumber offered for shipment to Baltimore and Philadelphia. The Merchants & Miners is trying to serve both ports with the same fleet that formerly served Savannah only before the line was extended to Jacksonville. The court decree stipulates that the Merchants & Miners' shall not take on any lumber at Jacksonville until all offered by Dixon & Co. at Savannah has been taken care of.

Dixon & Co. also wants damages for losses incurred by demurrage charges put upon it by the Central of Georgia Railway, which is forced by the Merchants & Miners' to hold its lumber cars in its yards without unloading. The Dixon company also complains that the Merchants & Miners' will not allow it to place lumber on its wharves at a place designated for that purpose, but will take all the lumber offered from interior points.

FROM THE GEORGIA CAPITAL.

ATLANTA, GA., Sept. 28.—An effort is to be made by S. K. Brown, vice president of the American Tie & Timber Company, to introduce into Georgia the advanced methods of forestry that are in use in European countries. For the purpose of studying these methods he has sailed for France, and will tour that country and also Germany.

General reports of the condition of the market are that it remains practically unchanged. Pole stock is off in demand and in price; some fancy orders have been received for heart facing, but that is due to the scarcity of this item. Business as a whole is expected to feel the effect of the advance in the price of cotton. Cotton here is selling at the highest prices that have been obtained since 1910.

Manufacturers in Georgia, chiefly cotton manufacturers but also a few lumbermen, have been partly instrumental in securing an investigation by the Government of the decrease in importations from the United States to China and Japan.

It is said that some trouble is being had in getting cars, but this difficulty seems to be confined to localities.

OLD DOMINION LUMBER NEWS.

Increase in Sales, with Better Tone to Inquiry—Curtailment Main Factor for Consideration; Some Mills Oversold.

NORFOLK, VA., Sept. 29.—The first part of September did not bring special signs of awakening in the pine business, but the latter part has shown up much better; not so much as to prices, however, as to demand. Sales for the last two or three weeks have gradually increased and inquiries seem to be coming in larger numbers than before but still offering prices that manufacturers consider absurd. Yards and other consumers have bought only for immediate requirements without providing for the future. Although building has fallen off somewhat it has been sufficient during the last few months to reduce stocks carried to below normal. In addition, shipments have fallen off somewhat.

But the main factor to be considered now and which will be felt later is the curtailment at most of the mills, full credence of which has not been given by the other end of the business. As an example of this curtailment, reports from thirty leading manufacturers of North Carolina pine show that they shipped during August over 2,000,000 feet of lumber more than they cut, a condition that had not obtained for many months. Reports from seventeen of the largest manufacturers show them to have been oversold September 1 about the same as on August 1, with a smaller surplus of dressed items. The condition of shipments exceeding the cut is not due to any increase in buying or demand, for August was a dull month, but is due entirely to the curtailing by the mills during that month, and the same condition probably will be found to have obtained when reports for September are received. Several weeks ago a notable increase in the number of inquiries was diagnosed as a feeler. Many buyers have come to the conclusion now

that the market has hit the bottom. The present increase in inquiries may be another feeler and may result in an increased demand for North Carolina pine.

Sales of edge box increase gradually and the box people seem to be more free than heretofore in coming to the standard mills for their requirements. Some are still selling below the market and in the same week getting better prices than the market on the same material. This does not look consistent with the firm attitude taken by most of the mills and accounts for the evident wide range of distribution. Culls and red heart are not overactive and are not so strong in price, for reasons not apparent. Dressed lumber shows up somewhat better, with roofers not so active but with prices gradually climbing to their old position. Stocks at the mills are not overlarge and the intention is not to make them so but to shut down if conditions are no better. The consensus is that conditions are generally better.

The following have been visitors to Norfolk: Guy I. Buell, president of the Montgomery Lumber Company, Spring Hope, N. C.; Horton Corwin, jr., president of the Branning Manufacturing Company, Edenton, N. C.; H. P. Woodson, Woodson & Graves, Burgaw, N. C.

W. B. Roper, secretary-treasurer of the North Carolina Pine Association, left Norfolk September 26 to attend the meeting of the Forest Products Exposition Committee in Chicago on October 1 and the meeting of the secretaries of the affiliated associations of the National association the day following.

S. F. Ivey, formerly of Benson, N. C., is now located at St. Paul, N. C., where he has leased the saw and planing mill formerly operated by the Chatham Lumber Company, and has also acquired a part of the company's timber for operation.

FROM THE MARYLAND METROPOLIS.

BALTIMORE, MD., Sept. 29.—A spirited controversy has developed between Gen. William D. Gill, of William D. Gill & Son, on one side, and Water Engineer Whitman, of Baltimore, on the other. It involves a contract for long-leaf pine to the value of about $1,400, which the firm bid on, and which it failed to get although it was the lowest bidder. The contract went instead to the Canton Lumber Company because the latter offered to supply lumber of the kind called for by the specifications, which stipulated among other things that the lumber should be 80 percent heart stuff. General Gill would not agree to furnish lumber of that kind, maintaining that it could not be done and that he would not bind himself to supply what he knew in advance would be practically impossible. When the Canton company got the contract, General Gill investigated, and, he says, found that the specifications were not being complied with in the lumber furnished by the successful bidder. He complained to the board of awards, not because he had any grievance against the Canton Lumber Company, being in fact on the friendliest relations with this corporation, but because the water engineer had advertised one thing and was taking something else. The water engineer asserted for his part that all the lumber accepted was fully up to the requirements, and it was explained in this connection that the Canton company had sent out lumber in excess of the quantity wanted, with the express proviso that any piece which failed to meet the requirements was to be returned.

It is stated that the wharf property on Philpot Street occupied by T. J. Shryock & Co. for a number of years, and which is known as Shryock's Wharf, will be offered for sale shortly in order to make a division of the Abrams Estate among the heirs.

President Rea, of the Pennsylvania Railroad, held a conference with Mayor Preston last week regarding the extensive terminal improvements which the company contemplates here. It is believed here that the railroad company will eventually make concessions, and has in fact been prepared from the beginning to do so, and other conferences are expected.

Interior of Dressed Lumber Shed at Arringdale, Va.

NEWS FROM THE HARDWOOD FIELD

KENTUCKY HARDWOOD NOTES.

MEMPHIS, TENN., Sept. 30.—Extremely heavy rains throughout Arkansas, Mississippi and western Tennessee during the last few days have stopped timber-cutting and preparing it for delivery to the mills in this city and section. However, timber already delivered is considerably above the average, time of year considered. It is estimated between 750 and 800 cars of logs are on the Memphis yards and that a great deal more timber is ready for shipment. Lumber manufacturers are taking the advice of the railroad officials and moving all the timber they can while cars are plenty and motive power is sufficient to make this possible.

While the movement of logs is large it is apparent that all of these are needed. Most of the larger mills in this city and immediate territory are running double shift, and where others are running only one shift they are putting in as many hours a day as possible. There is no large surplus of hardwood lumber in any direction, especially in dry stock.

It is expected that the shipment of mahogany logs recently made from South America to the Manufacturing Veneer & Lumber Company will soon arrive at New Orleans. This shipment will be handled from that point to Memphis with as much rapidity as possible. Approximately a million feet of logs compose this shipment and as soon as it arrives the receiving firm will begin converting the logs into veneers. The favorable rate recently given lumbermen here by the Illinois Central Railroad Company on the transportation of mahogany logs from New Orleans to Memphis is expected to greatly stimulate a business which promises to be profitable.

R. J. Darnell, of R. J. Darnell (Inc.), has sent the fire department a check for $200, and to Superintendent Conroy, of the salvage corps, a check for $100, to express the appreciation of Mr. Darnell and his associates of the splendid work by the fire department and the salvage corps during the fire at the lumber mill and veneer plant of this firm.

E. B. Griswold, manager of the pencil factory at Cotter, Ark., is authority for the statement that it has been necessary to close the plant owing to oversupply. Mr. Griswold says that all the big finishing plants have at least a two years' supply of pencil slats.

George D. Burgess, of Russe & Burgess (Inc.), has returned from an extended business and pleasure trip to Europe.

THE CUMBERLAND RIVER DISTRICT.

NASHVILLE, TENN., Oct. 1.—Local lumber firms closed September with about an average volume of business. Local building activities have not been on a large scale, and retail activity has been only fairly satisfactory. The end of the month, however, has witnessed increased activity in shipping demand. Inquiries are more numerous, and the outlook for October is regarded as good.

S. W. Warfield, who resides near Columbia, sold for $525 six fine trees standing in the forest on his place. C. C. Morgan, a Columbia dealer, bought the trees. Four of the trees were poplars and two were oaks. Thirty years ago Mr. Warfield was offered $8 each for the trees. The poplars were 15 feet in circumference.

The Tennessee Hardwood Lumber Company has filed for registration an amendment to its charter increasing the amount of authorized capital stock from $50,000 to $60,000. The increase was made to take care of a recent deal by which the Althauser-Webster-Weaver Lumber Company was recently absorbed. Thomas Johnson is president of the consolidated company.

IN NORTHEASTERN TENNESSEE.

BRISTOL, VA.-TENN., Oct. 1.—The mills of this section are about all running and the lumbermen report business somewhat better than during the summer. A large quantity of stock is moving and prospects are that mills will continue busy during the remainder of the year. Inquiries are more numerous and the tendency of prices is upward.

The band mill of the Peter-McCain Lumber Company will resume next week, having been closed for repairs. The company has a large amount of timber and will before a great while begin cutting on a large new tract in Carter County, Tenn. The Pittsburgh Lumber Company is turning out 75,000 feet of stock daily at its band mill at Hampton, Tenn. The company, which is owned by Senator William Flynn, of Pittsburgh, has a fifteen-year cut of timber in Carter County.

There is more activity in manufacturing in western North Carolina. The mills have been running steadily and a number of new ones are being installed along the Carolina, Clinchfield & Ohio and connecting lines, including the Black Mountain Railroad.

The Bristol Door & Lumber Company is running full time. Both the band and planing mills have run regularly this year and yet the company is behind with orders.

V. K. Simpson, secretary of the Paxton Lumber Company, is critically ill of typhoid at a local hospital.

R. H. Bonham is operating east of Bristol and is shipping a large volume of export stock from Bristol. The stock is being hauled to Bristol on huge motor trucks.

W. H. Beckner, National inspector located in Bristol, has returned from a trip in Virginia.

Managers of the Bristol offices of eastern concerns report heavy shipments from this section during September. They have bought heavily during the last few weeks.

VALLEY METROPOLIS HARDWOOD NOTES.

ST. LOUIS, MO., Sept. 30.—The hardwood people feel confident that their fall trade will be good and are preparing to meet it. More business is coming to them from consumers and from retail yards than has been the case for several weeks. Prices show inclination to become stronger. Most of the leading items on the list are called for rather freely and the minor items show considerable activity. The cypress trade is also considerably brighter than it has been and more orders are being placed than for a considerable time. Price conditions are more encouraging, and holders of cypress are feeling much encouraged over the outlook.

J. S. Garetson, of the Garetson-Greason Lumber Company, says the recent heavy rains have greatly handicapped its mill operations. The water is very high at all of them, Mr. Garetson says, but it is especially troublesome at the Wasson (Ark.) plant and logging is almost impossible. The effect of the heavy rains and high water will be very noticeable in the hardwood trade later on. During the extreme heat buying was light; now that it has begun and the high water prevents mill operations and shipments it will be a serious set back to the hardwood trade.

Frank Liebke, of the C. F. Liebke Hardwood Mill & Lumber Company, says that it has plenty of orders and plenty of lumber to fill all orders. The company is getting in logs for its winter run, from 15 to 25 logs arriving daily. A number of orders have accumulated and those are the ones that are being filled.

The C. F. Luehrmann Hardwood Lumber Company, according to E. H. Luehrmann, is having a very nice run of business. Orders for the oaks and red gum are especially heavy. The red gum trade is exceedingly good and the company has a good stock on hand to fill all orders. Mr. Luehrmann looks for a very good trade within the next couple of weeks, as consumers have not been buying as they should and must start to replenish their stocks shortly.

The Lothman Cypress Company reports an excellent trade. E. W. Blumer, sales manager, returned from a short selling trip through Iowa last week. He says business conditions in that territory are good and he looks for some business from that section soon. He left Sunday night for the Oshkosh mill of the company and will then go on a short selling trip through Wisconsin.

Thomas E. Powe, of the Thomas E. Powe Lumber Company, who returned last week from his vacation in North Carolina, says he found business in pretty good shape. The volume of orders was larger than during the month before, and shows signs of becoming better. It is a little quiet this week, caused, he thinks, by the rainy weather, but as many inquiries are coming in all the time he believes these will develop within the next few days.

W. W. Dings, of the Garetson-Greason Lumber Company, is in Chicago, visiting the trade.

R. U. Fletcher, vice president and manager of the Hooton Hardwood Lumber Company, returned home last Thursday from a three weeks' buying trip through Oklahoma, Texas, Arkansas and Mississippi. He says he bought about 2,000,000 feet of cypress, oak and ash, and that present mill prices are fully $2 a thousand under what they were ninety days ago. J. T. McRoberts, treasurer of the company, is covering Ohio and Indiana, selling of what Mr. Fletcher purchased.

QUEEN CITY TRADE FEATURES.

CINCINNATI, OHIO, Oct. 1.—Prospects for a general increase of demand for hardwood lumber are encouraging. Orders are for small lots as yet, but are more numerous, as are inquiries. Hardwood dealers say they are well pleased with the amount of business they are getting, claiming that September will show well on their books in both quantity and profits, although all are agreed that the price is off about $2. Only a few lumbermen state that business is not good and in most of those cases the slump in red gum is responsible for complaint.

Some dealers claim that the former demand for high-grade red gum in foreign markets was the result of a fad and now that styles have changed the wood is bound to suffer temporarily. Activity in the factories continues,

N. C. Pine

of high grade quality equal to **Camps** can only come from the choicest timber and modernly equipped mills.

Try Camp's Once and You'll Have no Other.

DAILY CAPACITY

Saw Mills - 600,000 feet
Planing Mills - 400,000 feet

MILLS:

Franklin, Va. **Arringdale, Va.**
Butterworth, Va. **Wilmington, N. C.**

SEND YOUR ORDERS TO

CAMP MANUFACTURING CO.

FRANKLIN, - - VIRGINIA.

Selling also the output of the Marion County Lumber Company, Marion, S. C.

Eastern Sales Offices:

NEW YORK: 1 Madison Avenue,
GEO. W. JONES, Mgr., Telephone 982 Gramercy.

PHILADELPHIA: Real Estate Trust Bldg.,
E. D. WOOD, Manager.

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Storage and Loading Shed at Wilmington Mill.

HARDWOODS

Varied Stock From 7 Mills

offer you every possible assurance of prompt shipments. We operate that number of Band Mills in West Virginia, Louisiana and Arkansas and by carefully kept records can answer your inquiries intelligently and quickly any time you want definite information.

West Virginia Poplar, Oak, Chestnut and Basswood Lumber and Bill Oak, Southern Red Gum, Cypress, Oak and Yellow Pine.

Inquiries Solicited.

West Virginia Timber Co.
CHARLESTON, W. VA.

General Offices
Charleston Nat'l
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Massee & Felton Lumber Company
HARDWOOD LUMBER
MANUFACTURERS
Mills and Office, MACON, GA.

Shipping Dry Stock List Aug. 1st.

3-4—1st & 2nd Sap Gum,	96,000	4-4—1st&2dQuar.RedGum.	99,000
4-4—1st & 2nd Sap Gum,	127,000	4-4—1st&2d PlainRedGum,	174,000
5-4—1st & 2nd Sap Gum,	66,000	4-4—1st & 2nd Fig. Gum,	26,000
6-4—1st & 2nd Sap Gum,	101,000	8-4—1st & 2nd Red Gum,	20,000
8-4—1st & 2nd Sap Gum,	40,000	4-4—No.1Com.Pl.RedGum	124,000
3-4—No.1 Com. Sap Gum,	22,000	8-4—No.1Com.Pl.RedGum,	21,000
4-4—No.1 Com. Sap Gum,	330,000	5-4—1st & 2nd Pl.Red Gum,	14,000
5-4—No.1 Com. Sap Gum,	21,000	4-4—Log Run TupeloGum,	85,000
8-4—No.1 Com. Sap Gum,	26,000	6-4—Log Run Black Gum,	35,000
4-4—No.2 Com. Sap Gum,	126,000	8-4—Log Run Hickory,	40,000
5-4—No.2 Com. Sap Gum,	12,000	4-4—Log Run Maple,	10,000
4-4—No.1Com.Quar.Gum,	71,000	4-4—No. 1 Com. Oak,	40,000
4-4—No.1 Com. Fig. Gum,	25,000	4-4—No. 2 Com. Oak,	17,000
4-4—Gum Strips 3" to 5" practically clear,	15,000	5-4—No. 1 Com. & Btr.Oak,	19,000

Ready for Prompt Shipment now, stock all 90 days and over dry, some of it 6 to 8 months dry.

Shippen Bros. Lumber Co.

WE SPECIALIZE in mixed cars for the yard trade, and can ship rough or dressed

White Pine, Soft Yellow Poplar

bevel and drop siding and mouldings together with OAK FLOORING all in same car.

Address all correspondence to — ELLIJAY, GEORGIA.

Hardwoods

We have the following Band Sawed Stock ready for quick loading:
150,000 ft. 1" Red Gum No. 1 & 2.
200,000 ft. 1" Sap Gum No. 1 & 2(13"&up)
50,000 ft. 3" Plain W. Oak No. 1 & 2.
100,000 ft. 1" Quart. W. Oak No. 1 Com.
Cable address "Brenner."

The Ferd. Brenner Lumber Co., ALEXANDRIA LA.,U.S.A.
Band Mills at:—Alexandria, La., Zwolle, La., Salisbury, N. C.

furniture men and implement manufacturers being good buyers.

Resumption of building operations on a big scale is encouraging to yellow pine dealers who do not expect much business from the yard men, but the fact they are gradually decreasing their large stocks is bound to necessitate the purchase of supplies sooner or later and should the better demand for railroad construction material and car stock keep on increasing as it has lately there is likely to be a reason for buying now, while prices are at rock-bottom.

FROM THE BUCKEYE STATE CAPITAL.

COLUMBUS, OHIO, Oct. 1.—Despite the growing car shortage the lumber trade has been fair. Prices have been well maintained generally.

The yellow pine trade shows some signs of improvement and the era of extremely low prices is believed to have passed. Transit cars are in demand. Dimension is wanted. On the whole improvement is marked.

Yards and factories are good hardwood buyers. Dry stocks at the mills are not large and no lower quotations are expected.

Collections are improving as there appears to be a general improvement in the money market. Mills are being operated full force. Shipments have been delayed by the lack of transportation facilities.

R. W. Horton, of the W. M. Ritter Lumber Company, reports a good demand for all varieties and grades of hardwoods. Factories are buying better. This is especially true of furniture and vehicle concerns. Yard stocks are light and dealers are still buying from hand to mouth. Prices are strong.

Clifford L. Gordon has resigned his position with the Marion Lumber Company, of Marion, O., to accept a position with the Teachout Sash & Door Company, of Columbus. He had been in the employ of the Marion company six years.

IN SOUTHWESTERN INDIANA.

EVANSVILLE, IND., Oct. 1.—Business remains fairly good and the large hardwood mills still run on full time. Taken as a whole September brought in as large a volume of trade as did the corresponding month of last year. Inquiries have picked up but collections are still a little off. Demand is strong for the better grades of oak, and hickory and poplar are strong. Due to the activity of the local furniture factories gum is moving briskly. Ash is in fair demand. Demand for the inferior grades of hardwood is better. Prices are firm and logs are coming in lively.

According to John C. Killer, secretary of the Evansville Business Association and of the Evansville Manufacturers' Association, building permits in Evansville since the first of the year have shown a gain of 50 percent over the corresponding period of last year. Local bank clearings have also shown a grain of over $5,000,000 for this year. A great deal of building is still being done and architects and contractors expect to keep busy for several weeks.

James Votaw has opened a hoop factory at Huntington, which is operating full time with a large force of men.

Articles of incorporation for the Locust Land Company have been filed in the recorder's office here, the capital stock of the company being $400,000. The company has for its purpose the buying up of hill lands and setting them out in black locust trees. The company will operate in southern Indiana and western Kentucky. After the land is bought and planted in locust trees it will be divided into small tracts and sold. Ronald F. Woods, of this city, is president of the company, and William Axton, formerly of Rockport, Ind., is the general manager.

Table manufacturers in Evansville and surrounding country report that they have had a prosperous year and most of the table factories are operated on full time. Oscar Klamer, who is president and general manager of the Schelosky Table Company, says trade in the Southwest is looking up, owing to the large cotton crop and he is looking for fine fall and winter trade.

AT THE HOOSIER METROPOLIS.

INDIANAPOLIS, IND., Sept. 29.—The yellow pine market is marking time, pending a readjustment of the financial situation. Meantime, car shortage is making it difficult to obtain yellow pine shipments from the South. By the time dealers begin buying in large quantities they may find it difficult to obtain prompt deliveries. Prices are low and the shingle market also is weak, with prices off about 15 cents. A number of building projects are being held in abeyance until the money market loosens up, which, it is thought will be within the next few weeks.

Chapin C. Foster has just returned from Chattanooga, Tenn., where he was a member of the Indiana delegation that attended the meeting of the Grand Army of the Republic.

The Carnegie Library Board at Carmel has awarded a contract to the Maxwen Lumber Company, Coatesville, for the erection of a library building to cost $9,050.

KENTUCKY HARDWOOD NOTES.

LOUISVILLE, KY., Oct. 1.—Comparatively little business has been done in Louisville this week, especially by lumber concerns located on the river. With motor boat races, river pageants, fireworks and other features held in connection with the Perry Centennial Celebration the distraction has been enough to keep many from getting down to active work.

The Builders' Exchange, of which most of the retailers are members, has issued its 1913 yearbook. It includes the lien laws of this State.

The Wood Mosaic Company hopes to have its new sawmill at Highland Park ready for use by December 1. It has decided to have its buildings in New Albany, Ind., where its veneer and flooring factories will be reëstablished following a recent disastrous fire.

The M. B. Farren estate, Cincinnati, Ohio, has sold the sawmill equipment of the old Southern Lumber & Boom Company, at Valley View, on the Kentucky River, to a mill at Bell Point, on the same stream. The equipment is now being moved.

Governor McCreary, of Kentucky, has signed the papers providing for the establishment of a forest patrol service at the joint expense of the State and Federal Governments. Patrols to protect the forests from fire will be established at once.

The Lawrenceburg (Ind.) Roller Mills has established a cooper shop in connection with its mill. The old shop was destroyed by flood last spring.

The Edgett & Ellis Company, Somerset, is buying a lot of cedar logs, that part of the State apparently having a great deal of cedar left.

The Clay County Land & Lumber Company, recently formed by Pineville, Ky., men to develop a tract of timber in eastern Kentucky, is reported to be considering the establishment of an electrically operated tramway from the tract to Barbourville.

A. H. McClure and others, of Frankfort, have purchased a large boundary of timber and coal land on lower Rockhouse Creek, in Letcher County, and plan to develop the property at once.

FROM EASTERN WEST VIRGINIA.

ELKINS, W. VA., Oct. 2.—General complaint for the last two weeks by shippers is of inability to get anywhere near the number of cars sufficient to handle orders. The effect of this has been to cause a large outlay for labor and the usual fixed charges without any return from the timber so sawed awaiting shipment, and, of course, has checked production.

In preparation for the construction of its road up Chenoweth's Creek, the Mountain State Lumber Company has purchased its steel rails and expects shortly to begin the construction of this line from Ward's Siding on the Western Maryland.

H. B. Evans & Co., who for several years have been operating above Huttonsville, have finished the transfer of their mill from the former location to a point on Chenoweth's Creek. H. B. Evans, Kent T. Evans and French Lee are the principal owners.

The Wilson Lumber Company, whose principal mill is at Mill Creek on the line of the Western Maryland, has acquired about 300 acres on Hamilton Run and Windy Run adjacent to their holdings in the Mingo and Huttonsville districts of Randolph County. The timber is principally hardwood.

D. E. Lutz & Sons, whose headquarters are at Mill Creek, have three mills in operation and the opinion is expressed by D. E. Lutz that the lumber market is in good shape, although seriously affected by the car shortage.

In operation at Millpoint, Pocahontas County, for eight years, the Warn Lumber Company cut its last log last week and closed the large mill permanently. From 200 to 300 men were employed at this plant, which was the principal source of support to Millpoint.

The generally prosperous condition of the lumber trade in the Richwood region is reflected in the large demand for cars in that section. Five hundred cars daily will not supply it. The Cherry Boom & Lumber Company at Richwood has ordered forty cars daily.

The development of large tracts of coal in the Roaring Creek and Middle Fork districts of Randolph County within the next year or so is expected to give considerable impetus to the lumber trade in that section.

IN CENTRAL VIRGINIA.

LYNCHBURG, VA., Sept. 29.—Activity in the pine market continues to increase. There are no signs of any unusually large demand, but inquiries are more frequent and orders larger and more general. Shipments during September will be considerably larger than they were in August and will show a big increase over July. Reports of shortages continue to come in from Virginia and North Carolina.

The better grades of rough lumber are moving much more freely than two weeks ago. Some advances in quotations have been noted, but these are slight. The range in prices is larger. demand for roofers, particularly 6- and 8-inch, continues to strengthen. Dimension stock is brisker than for some time. Partition, ceiling and flooring are also taken in good quantities. Reports from retail yards indicate that sales have been brisker and it is believed that stock is considerably lower than a month ago. Box boards are in better demand.

Building in eastern centers is less than it was during August, but there is more going on and more contracted for now than at this time last year, according to reports from the yards.

IN CENTRAL ARKANSAS.

LITTLE ROCK, ARK., Sept. 30.—Heavy rains the last few weeks have injured crops and have made work in the woods heavy. However, the price of cotton is rising with the falling off of the yield, so good times for the lumbermen are in prospect. It is estimated that the cotton crop has fallen off fully one-third in the last month, but this does not affect Arkansas as much as it would have done in previous years. The apple, peanut, sweet potato and rice crops are good.

Failure to have the cooperage union recognized by the large plants at Paragould caused a walkout of 150 employees last Tuesday, but the plants resumed operation as open shops yesterday. The men on strike were all employees in the heading department.

A HARDWOOD CENTER OF MICHIGAN.

CADILLAC, MICH., Sept. 30.—The Cadillac Handle Company will close its fiscal year on October 1, without having shut down except for a few days during the year and this idleness is for repairs to machinery. This company is receiving logs directly west of Pellston over the Grand Rapids & Indiana Railroad and is cutting 40,000 feet of lumber a day. It is doing a good business notwithstanding the demand for lumber is not as heavy nor as good as a year ago. The company, however, has no complaint to make and expects a good fall trade.

The Cadillac Veneer Company, which closed its factory for a short time in July for repairs, is running full force, with no indication of a slack period during the fall and winter months. The company is employing the usual number of men and its products are just as much in demand as heretofore.

The old Butters Salt & Lumber Company's plant at Buttersville, opposite Ludington, which was burned some time ago, is being torn down. There is considerable salvage and several hundred thousand feet of lumber are to be sold.

The broom handle factory of D. H. Hinkley has been moved from Brutus to Alanson. The plant at Brutus had been operated since 1899 and the reason for moving was the lack of timber close to the plant. During the last ten years Mr. Hinkley has manufactured more than 14,000,000 broomhandles at Brutus.

TIMBER LAND SALES

One of the largest timberland transfers recorded in Franklin County, Maine, has been filed at the register of deeds office in Farmington, conveying 23,040 acres of timberland from the Stetson Estate to the Kennebago Land Company. The land is located at Kennebago and has been in the Stetson family since 1860.

October 25 the Land Board of Idaho will offer at public auction at Boise 12,250 acres of timberland. The Barber Lumber Company has guaranteed to make the first bid of $100,000 in cash.

The Whaley Lumber Company, of Choushatta, La., has bought a tract of pine timberland near Campti for $25,000. The company will move its mill machinery to Campti and erect a plant.

S. J. Churchwell, of Lakesville, Miss., has sold the pine timber on 1,000 acres of his pine land at Lakesville to J. C. Dorsett, Willis McInnis and J. C. Woodard for $20,000.

LOCAL AND PERSONAL

TO VISITORS IN CHICAGO:

To enable your friends in the trade to reach you promptly advise the Information Bureau of the American Lumberman of your arrival, giving your hotel address and probable duration of your visit. Inquirers can then obtain this information by telephone—Harrison 4687.

J. H. Faust, of J. H. Faust & Co., Paducah, Ky., with mill at Pontotoc, Miss., was in Chicago on business this week.

J. H. Rosenberry, secretary and treasurer of the Rose Lake Lumber Company, Rose Lake, Idaho, was a Chicago visitor on Tuesday.

J. O. Anderson, general manager of English & Anderson, lumber dealers of Earl, Ark., was a caller this week at Chicago lumber offices.

Charles Boyd, president of the Charles Boyd Lumber Company, Cincinnati, Ohio, spent several days in Chicago this week, calling on the trade.

W. M. Farris, of the Farris Hardwood Lumber Company, Nashville, Tenn., was in Chicago two or three days this week on business in the interest of his concern.

James Fullerton, of the Fullerton Brothers Lumber Company, Minneapolis, Minn., returned a few days ago from a three months' trip abroad and stopped in Chicago while en route home.

Max L. Pease, of the Galloway-Pease Lumber Company, Poplar Bluff, Mo., paid Chicago one of his periodical visits this week. He reported a steady demand for the product of his concern and views the future optimistically.

S. M. Anderson, of the Bay City Box & Lumber Company, Bay City, Mich., spent last Monday in Chicago, following a brief trip to Culver, Ind., where he accompanied his son, who was enrolled as a student in Culver Military Academy.

Thomas F. Wiedeman, secretary of the Chicago Mill & Lumber Company, Chicago, left last week for the company's plant at Blytheville, Ark. Mr. Wiedeman will visit the different plants of the company before his return to Chicago.

T. J. Wilcox, secretary and treasurer of the Linderman Box & Veneer Company, Eau Claire, Wis., and G. C. Havener, secretary and treasurer of the Marquette Box & Lumber Company, Marquette, Mich., were in Chicago on business during the week.

Earl Bartholomew, of J. B. Ransom & Co., Nashville, Tenn., was a visitor in Chicago lumber circles this week. He said that while business might be heavier, his company is getting its share, and finds collections fair. He was optimistic about the future.

The Stuhr Lumber Company, of Minneapolis, Minn., has opened an office in Chicago at 845 Marquette Building, in charge of L. C. Dempsey, who will handle northern and western pine for the concern. Mr. Dempsey is familiar with the wants of the trade in this territory.

W. B. Roper, secretary and treasurer of the North Carolina Pine Association, of Norfolk, Va., was in Chicago this week in attendance of the meeting of the Forest Products' Exposition committee, held October 1, and the meeting of the secretaries of the affiliated associations of the National association October 2.

The Allis-Chalmers Manufacturing Company has removed its sales and engineering offices of its mining machinery department from Chicago to West Allis, Wis., where the Milwaukee works of the company are located. The Chicago shops will also be removed to Milwaukee later. This move has its advantages in concentrating all departments, both commercial and manufacturing, at one plant.

The Forster Lumber Company, of Milwaukee, Wis., has secured the able assistance of Oswald H. Ulbricht and William E. Allen to control the sale of its stocks of lumber, consisting of hardwoods, pine, hemlock etc. In addition to the products from the company's sawmills, it has made purchases and connections in the North, South and West, which enables it to furnish practically everything in lumber by the carload or otherwise.

J. B. White was in Chicago this week on his way home from a summer spent at Bemis Point, N. Y., where his summer residence is situated. Before returning to Kansas City Captain White visited Washington at the request of President C. L. Pack, of the National Conservation Congress, and assisted in formulating the program of the meeting of the congress to be held at Washington November 18-20. The program has advanced sufficiently to indicate that the meeting will be of unusual interest.

C. L. Harrison, of the Himmelberger-Harrison Lumber Company, Morehouse, Mo., was in Chicago this week attending the meeting of the Forest Products' Exposition committee of the National Lumber Manufacturers' Association. He said that the drouth of the summer had the effect in his particular territory of making logging conditions the best in the history of his company; swamps and stagnant bayous dried out and logs were gotten in at the minimum of loss. Market conditions in hardwoods are fairly satisfactory. There is no particular snap to the demand, and prices in some items are off a little, but on the whole the hardwood men of the Mississippi River Valley have little occasion to complain.

General Manager O. S. Galbreath, jr., of the Pagosa Lumber Company, Pagosa Springs, Colo., is visiting big mills and timber operations of the Pacific Coast States for the purpose of securing for his company the most modern and improved ideas in logging and milling operations. The Pagosa company will soon begin construction of what it claims will be the most modern and complete sawmill plant in the Middle West, to be located on its large timber holdings recently purchased on the Apache Indian Reservation, at Dulce, N. Mex.

N. A. Gladding, vice president of E. C. Atkins & Co., Indianapolis, Ind., during a call at the office of the AMERICAN LUMBERMAN Wednesday, said that, surprising as it may seem, their business this year has been a little greater month by month than for the corresponding months of 1912. At the beginning of the year they expected a considerable reduction in business, and some districts may not have held up to last year, but the aggregate has been as stated above. Nearly two-thirds of the business of the company comes from the lumber industries, so he felt safe in saying that the lumber business the country over had bought fully as many saws and other forms of steel products manufactured by his company as during 1912, which was an excellent year.

SWITCHING CHARGE CONFERENCE.

A conference was held in Chicago Wednesday afternoon in the rooms of the Illinois Railroad & Warehouse Commission, in the Railway Exchange Building, relative to an agreement to some rule that will govern the switching charge of the carriers within the State with the exception of Chicago and East St. Louis. About 75 traffic representatives of different lumber, coal, grain and manufacturing concerns were present.

The representatives of Chicago and East St. Louis let it be known that they were satisfied with the present switching agreement with the railroads and were not anxious for the reëstablishment of what is known as rule 23 or any substitute for it. The down-state interests appointed a committee of ten to confer with a committee of the carriers for the purpose of drafting a new switching charge rule. When this agreement is reached it will be submitted to the State commission for its approval. Secretary E. E. Hooper, of the Lumbermen's Association of Chicago, represented the Chicago lumber interests at the meeting.

PLANS FOR LUMBERMEN'S BUILDING.

Lumbermen of Chicago have always regretted that they have not had a home in the loop similar to those of other lumber centers of the country. They have felt that being housed under one roof would be a great convenience in consummating business, for as it is, lumbermen are scattered all over the city and out-of-town visitors and yardmen consume altogether too much time in making a few calls. With this end in view, about a year ago the Lumbermen's Association of Chicago appointed a committee consisting of George J. Pope, chairman; Everett A. Thornton and Edward E. Skeele to investigate the matter thoroughly and report back to the association. The committee has spent much time and energy in looking up available housing facilities in the loop. It has about finished its labors and will report to the association at an early date, probably at a meeting of the association to be held within two weeks.

The proposition on which the committee will report as a unit may be roughly outlined as follows: Arrangements have been tentatively made with the McCormick Estate to erect a building at the corner of Madison and La Salle Streets, on which now stands the old Roanoke Block. This building will be known as the "Lumber Exchange Building." The McCormick Estate agrees to begin work May 1, 1914, and to have the structure completed by May 1, 1915. In order to take advantage of this offer it will be necessary to have contracts signed up for space equivalent to 75,000 square feet by November 1, 1913. The rental rate is a very favorable one. The building will be sixteen stories high, the first floor to be taken up by stores; the second by other interests, and from the third floor to the fifteenth inclusive lumbermen can secure space. On the top floor it is proposed that the Lumbermen's Club and the Lumbermen's Association shall utilize all of the space, which amounts to 7,200 feet; as will be seen, this is almost one-tenth of the space necessary to carry out the guaranty. The building will be modern and up to date in every respect. The architects are Holabird & Roche, and this in itself will guarantee that the building will be first class, as the firm has a high reputation to uphold.

The leases on the space are to be made for ten years, with the privilege, however, of canceling at the end of five years. This is considered a fair business proposition.

The committee hopes there will be no lack of interest now on the part of anyone, but on the contrary

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In Less Than Carloads
find our methods of delivering at carload prices interesting. It might appeal to you—better let us quote you on
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and explain how we do it. A good stock enables us to fill orders without delay.
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SURE-FIT FLOORING
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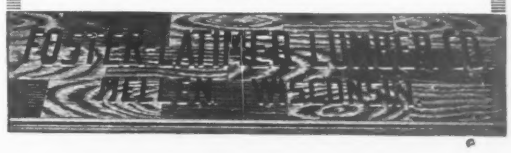
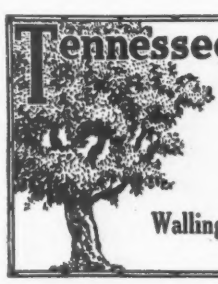
Is all the name implies and is the kind reputable dealers like to recommend to exacting customers
Write Today for Prices



WE CAN SHIP QUICK
125,000 ft. 4-4 No. 2A common Poplar
16,500 ft. 4-4 No. 1 common Poplar.
11,500 ft. 4-4 clear Saps and selects Poplar.
24,500 ft. 4-4 1st and 2nd Poplar.
3 cars 12-4 & 16-4 No. 2A com. & bet. Poplar.
5 cars 4-4 No. 1 common and better Chestnut.
2 cars 4-4 log run Sycamore.
If interested, we will be glad to quote you prices.
The Ward Lumber Co., Inc.
LYNCHBURG, VA.

Varner Land & Lumber Co.
Geridge (Lonoke Co.) Arkansas.
Quartered and Plain White OAK 3/8 to 3"
Plain Red Oak, Bridge Plank, Car Oak, Furniture Stock.
WHITE OAK PILING.



Tennessee Oak Flooring
Uniform in quality, grade and size. A trade winner for dealers who have reputations to sustain.
Inquiries Solicited.
Walling Lumber & Mfg. Company
McMinnville, Tenn.

HARDWOODS

American Column & Lumber Co.
ST. ALBANS, W. VA.

SPECIAL

For week following this issue:—

5 Cars 5-4 No. 1 Com. and Sel. Poplar.
60% 12" and wider 60% 14 and 16'.
4 Cars 6-4 12" and wider 60% 14 and 16'.

3 Cars 6" Clear Poplar Bevel Siding.
5 Cars 6" Select Poplar Bevel Siding.

65 M' No. 1 Common Poplar S 2 S to 5/8".

Write or wire for SPECIAL prices.

American Column & Lumber Co.
ST. ALBANS, W. VA.

John B. Ransom & Co.
NASHVILLE, TENN.

20,000,000 Feet
Dry Hardwoods on Sticks.

Can Ship Straight or Mixed Cars

AIR DRIED OR KILN DRIED
Rough or Dressed Stock.

WILL APPRECIATE YOUR INQUIRIES.

Write to the Nashville Hardwood Flooring Company
For prices on Acorn Brand Oak and Beech Flooring.

Your Customers
Won't Have an Excuse

for sending away from home for hardwood flooring after you get in your first car of our

Dixie Brand
Oak Flooring

It's the finest flooring you ever saw, perfectly milled, uniformly matched and graded — the result of years of honest endeavor and study.

Write us for copy of our new booklet on Oak Flooring which will be mailed free of charge.

Bliss-Cook Oak Company
BLISSVILLE, ARKANSAS

We ship straight or mixed cars of Flooring and Red and White Oak Lumber.

HARTZELL'S DAYTON WALNUT
Planks, Boards, Panels—Veneer Logs and Veneers
Made in our Modern Electrically Driven Mills.
GEO. W. HARTZELL, Dayton, Ohio, U. S. A.

R. E. Wood Lumber Company
BALTIMORE, MD.
Manufacturers
SOUTHERN HARDWOODS

that every lumberman who can—and that means every lumberman who has offices downtown—will get into communication with the committee and inform it how much space he will take, for the matter can not be delayed, because if the McCormick Estate is unable to secure the proper assurances before November 1 it will not entertain the proposition. The committee states that there are certain reasons why this favorable rate has been secured and will not hold good after November 1. Prompt action is therefore necessary to take advantage of this most favorable offer. An active canvass with the object of signing leases for space will begin within a few days by Dipplee & Manierre, 112 West Adams, who are agents for the McCormick Estate.

At the meeting of the Lumbermen's Association invitations will be extended to all lumbermen in Chicago to come and talk the matter over and view the plans that will be thrown on a screen at that time. The estate is expected to be represented and to assist the committee in answering all questions and giving desired information.

LUMBER COMPANY MOVES ITS GENERAL OFFICES.

Announcement was made this week by the Louisiana Lumber Company of the removal of its general offices from St. Louis, Mo., to Cairo, Ill., on October 1. The company has established at Cairo a wholesale assembling and distributing yard, together with a first-class planing mill with a daily capacity of 100,000 feet or more. It will carry a complete stock, consisting largely of yellow pine and boards, dimension, flooring, joists, timbers, pole stock, factory and railroad material, and in addition an adequate supply of cypress, oak, gum and west coast products.

The company has the patronage of a large number of buyers among retail yards, factories and woodworking plants in Missouri, Iowa, Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York, the New England States and Ontario. The change will be consummated without any interruption to business. The company announces that the plant at Cairo will enable it to serve its patronage exceptionally well. Direct shipments from the mills will proceed as heretofore with prices in accordance with the current market. In addition, the company will carry at Cairo a sufficient stock—perhaps 15,000,000 feet—and can serve its following in as many different ways as the exigencies of the retail business may demand.

The announcement states that 95 percent of the shipments moving from the company's shipping point to the States mentioned properly move by way of Cairo. This affords the company an opportunity of including, in such mill shipments of yellow pine, large or small lots of cypress, gum finish and siding, oak flooring and millwork in large or small lots to suit the convenience of the trade, any item of yellow pine for quick delivery which the mills do not have or can not make from the Cairo yard.

The company believes it will be able to make better prices and quicker deliveries on merchandise shipments from Cairo than were possible from St. Louis. Shipments filled at Cairo at closing time any day will reach Indianapolis or other similar destinations at 2 a. m. the second morning. Attention is called to the company's added facilities, which enables its to cater to every class of trade requiring one piece or a carload. The company will aim to furnish stock through the channel of the retailer only and announces that it is its earnest desire to coöperate with the trade as far as possible.

PLANS FOR THE FOREST PRODUCTS EXPOSITION.

On Wednesday the Forest Products Exposition committee of the National Lumber Manufacturers' Association met at the Blackstone Hotel, of this city. Besides the members of the committee there were a few other gentlemen interested in the Exposition's project, which is to be embodied in two shows, one to be given at the Coliseum in Chicago April 30 to May 9, and the other in New York City at the Grand Central Palace May 21 to May 30.

The session was practically continuous, but it adjourned to an adjoining room for lunch. Robert H. Downman, of New Orleans, president of the National Lumber Manufacturers' Association, was at one end of the long table and facing him at the other end was L. S. Case, of St. Paul. Other gentlemen at the table were: W. A. Hamar, Chassel, Mich.; R. S. Kellogg, Wausau, Wis.; A. W. Cooper, Spokane, Wash.; Thorpe Babcock, Tacoma, Wash.; William H. Weller, Cincinnati, Ohio; George E. Watson, New Orleans, La.; C. L. Harrison, Morehouse, Mo.; J. C. Knox, Cadillac, Mich.; W. B. Roper, Norfolk, Va.; J. E. Rhodes, Chicago, and George S. Wood, Chicago, manager of the Forest Products Exposition.

The lunch hour was a relief from the detailed business of the session and representatives of the different woods vied with each other in large stories about the durability of their special products, and they told some rather difficult stories about sawmills. One of the genuine instances of the long life of timber was, however, told by George Watson. He said that there is a lumber manufacturing establishment in New Orleans which was built in 1833 and has been occupied continuously ever since. Its roof is of cypress shingles and it has been recovered but once. Redwood, red cedar and hemlock had their own tales to tell. White pine, however, stood on its feet and declined to compete.

In the evening J. E. Rhodes, secretary of the association, had the gentlemen as his guests at a theater party at the Garrick Theater to see "The Road to Happiness."

The decision has been reached that the charge for floor space in the Coliseum in Chicago and the Grand Central Palace in New York shall be $1 per square foot with the exception of 2,500 feet in the center of each exposition hall. This reserved space will be divided into four sections and the charge will be $1.50 per square foot. Eight of the eleven affiliated associations of the National Lumber Manufacturers' Association have already purchased the amount of stock assigned to each association of $2,000 each. Space on the main floor of each exposition building has been tentatively assigned each of the associations by lot and subject to probable changes that conditions may warrant later on.

At the meeting Secretary Rhodes, of the association, spoke upon the financial phase of the exposition. Manager Wood, of the exposition, spoke on the prospects of the association; the form of contract which would be made with the exposition; the character of the exhibits; the transportation problems connected with the project and the advertising features. The exposition will take charge of the packing and trucking of the different exhibits under certain conditions. Secretary Rhodes announced that one of the features of the exposition will be moving picture shows covering every phase of forestry and lumbering and already three different sets of films have been promised.

On Thursday morning Secretary Rhodes met with the different secretaries of the affiliated associations and outlined to them in detail the exposition projects. A meeting was also held at the Blackstone Hotel and the secretaries present were: Thorpe Babcock, West Coast Lumber Manufacturers' Association, Tacoma, Wash.; A. W. Cooper, Western Pine Manufacturers' Association, Spokane, Wash.; H. S. Childs, Northern Pine Manufacturers' Association, Minneapolis, Minn.; George K. Smith, Yellow Pine Manufacturers' Association, St. Louis, Mo.; R. S. Kellogg, Northern Hemlock & Hardwood Manufacturers' Association, Wausau, Wis.; George E. Watson, Southern Cypress Manufacturers' Association, New Orleans, La.; William H. Weller, Hardwood Manufacturers' Association of the United States, Cincinnati, and W. B. Roper, North Carolina Pine Association, Norfolk, Va. W. F. Biederman, secretary of the National Lumber Manufacturers' Credit Corporation, St. Louis, Mo., attended the meeting, and M. F. Gallagher, attorney for the wooden box interests in the Pridham fiber box case, was also present and outlined the plans of the wooden box people in the case, which is to receive oral argument before the Interstate Commerce Commission, Washington, D. C., on October 9.

RECEIPTS OF LUMBER BY WATER.

From September 23 to September 29 inclusive, twenty-four vessels brought 10,418,000 feet of lumber and 1,500,000 lath to Chicago for distribution. The largest individual cargo—1,125,000 feet of lumber—was carried by the schooner *Ashland* from Duluth, Minn. The next largest cargo—935,000 feet—was carried by the barge *Barge No. 1*, from West Neebish, Mich.

Arrivals by days and vessels were as follows:

September 23—Str. *Maggie Marshall*, Manistee, Mich., 400,000 feet; Str. *F. W. Fletcher*, Marinette, Wis., 285,000 feet; Sch. *Arendal*, Vans Harbor, Mich., 187,000 feet; Sch. *Cora A*, Wells, Mich., 330,000 feet.

September 24—Str. *B. H. Hettler*, Duluth, Minn., 803,000 feet; Str. *Sidney O. Neff*, Arcadia, Mich., 263,000 feet.

September 25—Str. *O. E. Parks*, Manistique, Mich., 124,000 feet; Str. *O. E. Parks*, Manistique Mich., 1,500,000 lath.

September 26—Str. *N. J. Nessen*, Manistee, Mich., 350,000 feet.

September 27—Bge. *Barge No. 1*, West Neebish, Mich., 935,000 feet; Str. *Maggie Marshall*, Manistee, Mich., 400,000 feet; Sch. *Tempest*, West Neebish, Mich., 318,000 feet; Str. *I. W. Stephenson*, Wells, Mich., 365,000 feet; Sch. *Resumption*, Escanaba, Mich., 200,000 feet.

September 28—Str. *T. S. Christie*, Escanaba, Mich., 326,000 feet; Str. *F. W. Fletcher*, Manistique, Mich., 348,000 feet; Sch. *J. I. Case*, Duluth, Minn., 985,000 feet; Sch. *Ashland*, Two Harbors, Minn., 1,125,000 feet.

September 29—Str. *Peters*, Baraga, Mich., 460,000 feet; Str. *Philetus Sawyer*, Naubinway, Mich., 464,000 feet; Bge. *Interlaken*, Nahma, Mich., 630,000 feet; Str. *L. Edward Hines*, Duluth, Minn., 450,000 feet; Str. *L. Edward Hines*, Port Wing, Wis., 300,000 feet; Str. *George C. Markham*, Vans Harbor, Mich., 370,000 feet.

NEW SALES PLAN CONSUMMATED.

Savannah, Ga., Sept. 29.—By the recent formation of the Hilton-Dodge Sales Company, this city, a complete readjustment has been effected in the sales end of Hilton-Dodge Lumber Company's business.

The new Hilton-Dodge Sales Company was incorporated for the purpose of facilitating the handling of all the lumber manufactured by the Hilton-Dodge Lumber Company, which concern has heretofore always handled the sales of its own lumber. The new sales company, which is incorporated under the laws of Maine, will buy and sell all of the lumber manufactured at the several mills of the lumber company, the Hilton-Dodge Sales Company being entirely separate and distinct from the Hilton-Dodge Lumber Company.

Following are the officers of the new sales organization: R. H. Knox, president, Savannah; A. Shoaf, first vice president, Savannah; Thomas Gresham, second vice president; Richmond; William Dillon, treasurer, Savannah; W. C. Parker, jr., secretary, Savannah.

The managerial head of the concern is Mr. Shoaf, who formerly had charge of the New York office of the Hilton-Dodge Lumber Company, and is a man of wide experience in the sales game.

J. K. Foster, formerly sales manager of the Saner-Whiteman Lumber Company, Caro, Tex., has accepted a traveling position with the Southern Lumber Company, Warren, Ark., effective October 1, and will travel in northern Missouri.

BUSINESS CHANGES, INCORPORATIONS, ETC.

BUSINESS CHANGES.

ARKANSAS. Texarkana—George F. Cotter, vice president of the National Lumber & Creosoting Co., has resigned.

Almyra—The plant of the National Handle Co. has been acquired of Earl Rhodes, of Stuttgart.

Little Rock—The Little Rock Handle Co. has been succeeded by the Berry Hartwell Handle Co., which company will reopen the plant.

CALIFORNIA. Tropico (P. O. Los Angeles)—The Tropico Lumber Co. has been succeeded by F. J. Wheeler.

FLORIDA. Milton—The Chaffin sawmill has been acquired by Mays & Lindsey, of Pollard, Ala.

GEORGIA. Savannah—Thomas Hilton, vice president of the Hilton-Dodge Lumber Co., has withdrawn from the company.

IDAHO. Lewiston—The Potlatch Lumber Company has sold its yards here to the Madison Lumber & Mill Co., of Spokane, Wash.

ILLINOIS. Harrisburg—The Saline County Lumber Co. has been succeeded by the J. B. Ford Lumber Co.

Joliet—The Pizarro Piano Co. has changed its name to the Nussbaum Piano Co.

La Hogue—The Farmers Elevator Co. has been succeeded by L. J. Seiling & Co., lumber dealers, etc.

Marion—W. G. Cochran has been succeeded by the W. G. Cochran Lumber Co., recently incorporated with an authorized capital of $10,000.

Rockefeller—The post office has been changed to Area.

INDIANA. Union City—The Union City Body Co. has increased its capital stock to $75,000.

IOWA. Knoxville—The Knoxville Lumber Co. has been succeeded by the Taber Lumber Co., with headquarters at Keokuk.

Melcher—The post office name has been changed to Dallas.

KANSAS. Acres—D. C. Brown has been succeeded by the Home Lumber & Supply Co., with headquarters at Ashland.

Burlington—The Glen Lumber Co. has been succeeded by the Long-Bell Lumber Co., with purchasing department at Kansas City, Mo.

Hiawatha—The Adams Washer Co. is out of business.

Hugoton—The Big Jo Lumber Co. is out of business.

Lawrence—The Lawrence Cabinet Co. is out of business.

Matfield Green—Henry Brandley is out of business.

Mineral-Radley—The Mayer Coal Co. has closed its local yard.

Salina—Frank J. More is out of business.

Satanta—The Rounds & Porter Lumber Co. is out of business.

Shields—J. H. Eitner is out of business.

Wichita—The C. D. Jones Lumber Co. is out of business.

Wichita—The Trekall & Smith Lumber Co. is out of business.

KENTUCKY. Clearfork—The post office here has been discontinued and mail should be addressed to Colmar.

Oz—The post office here has been discontinued and mail should be addressed to Yamacraw.

LOUISIANA. New Orleans—The Lambou & Noel Lumber & Manufacturing Co. is liquidating.

MAINE. Bowerbank—The post office here has been discontinued and mail should be addressed to Sebec.

MASSACHUSETTS. Boston—Fred G. Newton has been appointed sales agent for the Northern Lumber Co. of St. Johnsbury, Vt., with offices 170 Summer Street, Boston. Mr. Newton succeeds E. O. Lake, who has engaged in business for himself. Correspondence in regard to buying or selling of lumber should be addressed to the company at the Boston office. Invoices, settlements and correspondence relative to accounts of financial matters should be addressed to the company's home office, St. Johnsbury, Vt.

Springfield—F. A. Holbrook has retired from the Longwell-Holbrook Lumber Co. and the firm name has been changed to the F. E. Longwell Lumber Co.

MICHIGAN. Turner—The Roy P. Eymer Lumber Co. has sold out.

MISSISSIPPI. Canton—The Hill-Wales Lumber Co. has been succeeded by the Virden-Wales Lumber Co.

MISSOURI. Crocker—The Gleave & Hicks Lumber, Furniture & Produce Co. is out of the lumber business.

Kansas City—J. A. Halamick is out of business.

Kansas City—The Hodes Planing Mill is out of business.

Kansas City—The E. W. Lawson Lumber Co. is out of business.

Osceola—The Logan-Moore Lumber Co. has been succeeded by the R. J. Hurley Lumber Co.

Otterville—J. A. Schroeder is out of business.

NEW JERSEY. Paul W. Figuera is out of business.

NEW YORK. New York—William Gibson (Inc.), is closing out.

Watkins—The Independent Feed Coal & Lumber Co. has been succeeded by E. R. Love & Son.

NORTH CAROLINA. Durham—The Chatham Lumber Co. has increased its capital stock from $50,000 to $449,000.

St. Paul—S. F. Ivey, formerly of Benson, is now located here and has leased the saw and planing mill formerly operated by the Chatham Lumber Co., and has also acquired timber which he will manufacture.

NORTH DAKOTA. Belfield—English & Boyum have sold their yard to McCarty & Langlois.

OHIO. Ashley—H. E. Smith has bought the interests of E. Cryder in the McKenzie & Cryder sawmill.

OKLAHOMA. Lamont—The Florence Lumber Co. has been succeeded by the Amsden Lumber Co.

Park Hill—The Park Hill Lumber Co. is out of business.

OREGON. Portland—The plant of the Gold Medal Shingle Co. has been taken over by T. W. Nordby.

SOUTH DAKOTA. Rockham—The Royal Lumber Co.'s yards here have been acquired by the Atlas Lumber Co.

TENNESSEE. Memphis—The Crenshaw-Gary Lumber Co. has increased its capital stock from $50,000 to $75,000.

WASHINGTON. Leavenworth—The Lamb-Davis Lumber Co. has moved its sales offices here from Spokane and is prepared to handle all inquires promptly.

WEST VIRGINIA. Blakeley-Clendenin — Steinbeck & Steinbeck are out of business.

WISCONSIN. Maiden Rock—The Spring Valley Spoke, Stave & Heading Co. is removing its plant to Deer River, Minn.

Oshkosh—The Paine Lumber Co. will remove to Antigo.

CORRECTION.

CALIFORNIA. Loyalton—The recently published report that the California Lumber Company had been succeeded by T. Squires is an error. The California Lumber Company is owned and operated by A. F. Dodge, president and superintendent.

INCORPORATIONS.

ALABAMA. Jackson—The Jackson Hardwood Lumber Co., authorized capital $10,000; E. D. Brewer and others.

CALIFORNIA. Los Angeles—The Associated Floor Co., authorized capital $10,000; H. Nelson, Edward Johnson, Roy Thompson, Paul Mahre and Edward Moshier.

Tropico—The Glendale Lumber Co., authorized capital $10,000; F. J. Wheeler, Dan Campbell and Frances J. Wheeler.

FLORIDA. Jacksonville—The Excelsior Manufacturing Co., authorized capital $50,000.

IDAHO. Caldwell—The Binford Lumber Co., authorized capital $40,000; I. S. Binford, Minnie J. Binford and Arthur A. Binford.

Coeur d'Alene—The Webber Logging & Timber Co., authorized capital $100,000; H. H. Webber in charge, with offices in the Harding Block.

ILLINOIS. Chicago—The Irving Park Builders Material & Lumber Co., authorized capital $10,000.

Galesburg—The Sherman Gate Co., authorized capital $5,000.

Elgin—The Elgin Silo Co., authorized capital $100,000.

Madison—The Madison Tie Co. of Minneapolis, Minn., has been licensed to incorporate in Illinois; authorized capital $88,851; S. H. Bowman, president; T. W. Harris, secretary, and Ray E. Kueland, representative here.

INDIANA. Indianapolis—The New Cabinet Co., authorized capital $150,000.

South Bend—The Federal Wood Products Co., authorized capital $7,000.

IOWA. Waterloo—The Crow Wing Lumber Co., authorized capital $25,000.

LOUISIANA. New Orleans—The Howdumac Lumber Co., authorized capital $5,000; E. R. Damont, president; M. E. Howland, vice president and D. R. McGinnis, secretary and treasurer.

New Orleans—The Ollie Cypress Co., authorized capital $30,000; W. S. Bender, president and treasurer; J. T. Orillion, vice president and T. M. Cotton, secretary.

Winnsboro—The Big Creek Lumber & Timber Co. (Ltd.), authorized capital $25,000; E. A. Enochs, president; Eugene S. Enochs, secretary and treasurer and J. W. Lockridge, vice president.

MAINE. Dover—The Maine Pulpwood Co., authorized capital $5,000; M. Hudson, president and George J. Babson, treasurer.

MASSACHUSETTS. Lowell—The A. L. Brooks Co., authorized capital $60,000; A. B. Woodworth, jr., Arthur J. Murkland.

Springfield—The Chapin-Holbrook Lumber Co., authorized capital $25,000; F. A. Holbrook, president; George D. Chapin, treasurer and C. E. Bill.

Templeton—The Otter River Board Co., authorized capital $75,000; John P. O'Brien, president and treasurer; Windsor Locks, T. F. Wallace and H. B. Heselton.

Worcester—The M. K. Smith Co. (to deal in lumber), authorized capital $25,000; Malcolm K. Smith and Helena M. Maloney.

MISSISSIPPI. Meridian—The Rainey-Thames Lumber Co. (to wholesale and retail), authorized capital $6,000; Bolivar E. Kemp, R. L. Rainey and T. R. Thames.

MISSOURI. St. Louis—The Standard Tie & Lumber Co., authorized capital $2,000.

NEW YORK. New York—The Acme Woodworking Co. (Inc.), authorized capital $6,000; Max V. Epstein, Joseph Krown and Isaac Ross.

Oneida—The Parry Corporation (lumber, iron, etc.), authorized capital $30,000; William B. Parry, H. Barrow Parry and Fred B. Parry.

Oswego—The Champion Wagon Co., authorized capital $25,000.

NORTH CAROLINA. Scotts Hill—The Keystone Land & Lumber Co., authorized capital $50,000; W. A. Marshall, Joseph Lytle, James L. Grable and Sadie B. Grable and E. K. Bryan.

OHIO. Cleveland—The Cleveland Mineral Floor Co., authorized capital $10,000; H. C. Masters.

Youngstown—The Youngstown Barrel & Cooperage Co., authorized capital $10,000; Oscar H. Altschuler, Ben M. Leavitt, Edward Altschuler, Joseph Leavitt, F. Leavitt and M. Altschuler.

OREGON. Portland—The Belcher Hardwood Floor Co., authorized capital $5,000.

PENNSYLVANIA. Courtdale—The Manufacturers Selling Co. (to deal in timberlands and building supplies), authorized capital $25,000.

Manheim—The Manheim Planing Mill Co., authorized capital $25,000.

SOUTH CAROLINA. Spartanburg — The Davenport Lumber Co., authorized capital $15,000; B. M. Davenport, G. M. Hart and G. G. Davenport.

TENNESSEE. Knoxville—The Devil's Den Lumber Co., authorized capital $100,000; F. S. Chapman, R. S. Young, W. J. Donaldson, Samuel E. Young, jr., and George E. Bell.

Memphis—The Verner Lumber Co., authorized capital $5,000; W. C. Wilhelm, J. H. Land, J. M. McKernan, J. W. Hull and C. W. Anderson.

TEXAS. Dallas—The Boggs Wood & Coal Co., authorized capital $3,000; John I. Boggs, Thomas Epps and George L. Anderson.

Rusk—The Powell Land & Lumber Co., authorized capital $44,000; C. B. Powell, J. M. Simmons and Jim Ford.

VIRGINIA. Sussex—The Sussex Lumber Co. (Inc.), authorized capital $50,000; J. J. Mitchell, president; J. E. Griffin, vice president and B. F. Mitchell, secretary.

WASHINGTON. Oakville—The Smith & Prosser Mill Co., authorized capital $13,000.

Spokane—The Columbia River Cedar Co., authorized capital $15,000; W. S. Adams, R. D. Shinn and H. L. Rablin.

WEST VIRGINIA. Huntington—The Coldwater Timber Co., authorized capital $15,000.

Huntington—The Eureka Lumber Co., authorized capital $16,000; Fred Owen, H. M. Shaul, C. A. Phellis, H. H. Roberts and T. R. Shepherd.

NEW VENTURES.

CALIFORNIA. San Diego—The Knolls Lumber Co. has been organized.

San Martin—C. B. Cox recently began the retail lumber business.

ILLINOIS. Chicago—The Fidelity Lumber Co. recently began the commission lumber business at 327 South LaSalle Street.

Chicago—Patek & Abrams recently began the wholesale lumber business.

IOWA. Breda—G. Brandsma recently began the lumber business.

HARDWOODS

Ample Facilities Insure Quick Service

and long experience in the sawing of Southern woods is a guarantee of quality in our

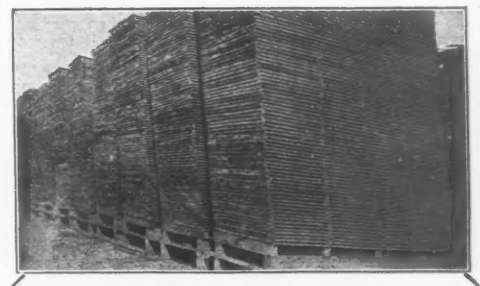
Red and Sap Gum, Cypress Yellow Pine, White Ash or Red & White Oak.

Tell us your needs and get our prices. Our Lumber is all Band Sawn.

TRIANGLE OAK Flooring

Triangle Lumber Co.

J. H. ALLEN, Pres't & Gen'l Mgr. Clio, Ark.



St. Francis Basin Red Gum

We constantly have large and well assorted stocks on hand, air dried, and can ship without delay.

Send us your orders for Mixed Cars of RED GUM, OAK, ASH AND ELM.

J. H. Bonner & Sons

Mills and Office, Quigley, Ark. Post Office and Telegraph Station, HETH, ARK.

RED GUM SPECIALISTS

HIMMELBERGER-HARRISON LUMBER COMPANY

MILLS AT MOREHOUSE, MO. SALES OFFICE CAPE GIRARDEAU, MO.

The Atlantic Lumber Co.

INCORPORATED.

Manufacturers and Wholesale Dealers

Hardwoods

Branch Office, 620 White Building, BUFFALO, N. Y.

Mason Building, 70 Kilby Street, BOSTON, MASS.

OAK FLOORING

Kiln Dried

Polished

CARRIER LUMBER & MFG. CO. SARDIS MISS.

HARDWOOD LUMBER OAK FLOORING BOX SHOOKS BENT WOODWORK ROTARY CUT VENEER

Matched End and Hollow Backed

PITTSBURGH

For Quick Sale

We will make special inducements on

300,000 Feet

4-4 Sound Wormy

White Oak

Prompt attention given inquiries.

Babcock Lumber Co.

PITTSBURGH, PA.

Soft Cork White Pine Shop Lumber

Will gladly quote delivered prices either rough or dressed. Have a good stock all grades and thicknesses, but anxious to move few cars each of

5-4, 6-4 and 8-4 No. 2 and 3 Cuts

to make piling room for new sawing. Stock is dry and bright and out of big cork pine timber. Tonawanda Grades.

American Lumber & Mfg. Co.

PITTSBURGH, PA.

IDAHO

White Pine Specials

1 x 12 No. 1 Common.
1 x 12 No. 2 Common.
4-4" 5-4" 6-4" 8-4" D Selects.

Good Dry Stock—Special Prices For 30 Days.

WM. SCHUETTE & CO., Inc., Pittsburgh, Pa.

West Penn Lumber Co.

Wholesale Lumber

WHITE PINE YELLOW PINE
HEMLOCK HARDWOODS

PITTSBURGH, PA.

HARD MAPLE

Dry Stock 1" to 4" Thick

We also have a complete stock of High Grade White Pine, Spruce and Hemlock.

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Northern White Pine & Hemlock

VEST POCKET READY RECKONER

72 pages of tables showing contents of any number of pieces of dimension lumber 1x8—10, to 12x20—40, weights of lumber, shingles, lath, different log scales etc. Twenty-five cents a copy. AMERICAN LUMBERMAN, Chicago.

Bryantburg—The Bryantburg Lumber Co. has begun business.

Madison—The Western Manufacturing Co. has commenced manufacturing step-ladders, ironing boards, woodworking articles, etc.

KANSAS. Cimarron—The A. Aitken Lumber Co. recently began business here with purchasing department at Macksville.

Simpson—The Farmers Mercantile & Lumber Co. is organizing.

MASSACHUSETTS. Boston—E. O. Lake, formerly with the Northern Lumber Co., has organized the E. O. Lake Lumber Co., with offices at 170 Summer Street.

Springfield—The William E. Bent Co. recently began the wholesale lumber business.

MISSISSIPPI. Crenshaw—L. L. Barham has begun the lumber business, etc.

Louisville—The Peoples Tie & Timber Co. has been organized by Dr. W. Spiva, T. A. McCreary, J. D. McCraw and H. H. Jones.

MISSOURI. Ash Grove—The Ash Grove Lumber Co. recently began business.

Neosho—George Cooksey recently entered the lumber business.

MONTANA. Oswego—The O. N. Olson Lumber Co. recently began business.

OHIO. Wapakoneta—The George G. Rice Lumber Co. recently began business.

OREGON. Portland—Covert & Craig recently began the lumber brokerage business.

TENNESSEE. Jackson—The Ashby-Blatchly Manufacturing Co. recently began manufacturing thin lumber and veneers.

TEXAS. Hallettsville—Schubert Bros. have opened a lumber yard here.

Houston—The G. F. Cotter Supply Co. recently began the lumber and tie business.

Houston—J. L. Tryon recently began the commission lumber business.

Stockdale—The Stockdale Lumber Co. has entered the trade.

NEW MILLS AND EQUIPMENT.

NEW YORK. St. Johnsville—J. A. Breining & Son, of Williamsport, Pa., will establish a sawmill here to manufacture lumber.

OHIO. Cleveland—The Cleveland Cooperage Co. will make improvements costing $15,000. A building 79 by 138 feet will be erected. Later the company will erect a large warehouse.

New Bremen—The Klanke Furniture Company will rebuild factory recently destroyed by fire.

OKLAHOMA. Bokoma—The Wilson Lumber Co. will rebuild lumber plant, including single band sawmill, kiln, light plants, water-works, sheds, etc.

OREGON. Brookings—The Brookings Timber & Lumber Co. will erect a double band mill, a planing mill and box factory.

PENNSYLVANIA. Philadelphia—The Pearson & Ludasher Lumber Co. will erect a shed 96 x 160 feet, to cost $4,500.

WASHINGTON. Tono—The Wabash Lumber & Shingle Co. will build a mill.

CASUALTIES.

FLORIDA. Lakeland—The Carter Manufacturing Co.'s mill, six miles north of here, was burned September 16; loss $50,000; $30,000 insurance.

GEORGIA. Quitman—The shingle and planing mill of the Interstate Lumber Co. was destroyed by fire September 13.

IOWA. Guttenberg—The Guttenberg Hardwood Sawmill Co.'s plant was visited by fire recently, causing a loss of $25,000, which is covered by insurance.

LOUISIANA. New Orleans—The plant of the H. W. Johns-Manville Co. was visited by fire September 25; loss $85,000.

Pine Cliff—The Pine Cliff Lumber Co.'s plant was swept by fire recently; loss $2,500.

MISSISSIPPI. Pontotoc—J. T. Hyde's planing mill burned September 18; loss $1,500.

MISSOURI. Kansas City—The Flannigan Bros. Manufacturing Co.'s planing mill burned September 22, entailing a loss of $7,000, which is partly covered by insurance.

MONTANA. Ravalli—Fire September 16 destroyed a warehouse, grain elevator, lumber yards and buildings of the Beckwith Mercantile Co.; loss $35,000.

NEW JERSEY. Cranford—The plant of the Hausbeck-Smith Lumber Co. was visited by fire September 20, which caused a heavy loss.

OHIO. Norwalk—The large band sawmill of the Norton Hardwood Co. was destroyed by fire September 20; loss $5,500; insurance $2,000. The company will rebuild in some other place where there is more timber than here.

OREGON. Dexter—Cruzan Bros. lost a small sawmill by fire September 13; loss $5,000, with $4,500 insurance.

PENNSYLVANIA. Biglerville—The planing mill owned by E. L. Lanver was visited by fire September 21; loss $15,000, of which $4,000 is covered by insurance.

TENNESSEE. Lawrenceburg—A sawmill owned by S. V. Lidwell, ten miles east of here, was destroyed by fire recently; loss $600.

White Bluffs—A sawmill belonging to F. H. Crow was burned recently, causing a loss of several thousand dollars.

WASHINGTON. Raymond—The plant of the Southwest Manufacturing Co. was destroyed by fire September 23; loss $150,000, which is partly covered by insurance. The machine shop and dry kilns were saved.

Spokane—The plant of the Dean Lumber & Fuel Co. was visited by fire recently, causing a loss of $20,000. The burned structures will be rebuilt.

WYOMING. Ranchester—The Big Horn Timber Co. experienced a fire recently which caused a loss estimated between $20,000 and $60,000.

BRITISH NORTH AMERICA.

ALBERTA. Innisfail—The Crown Lumber Co. suffered a fire loss recently amounting to $12,000.

NEW HARDWOOD DIRECTORY.

The new issue of the directory of the National Hardwood Lumber Association has just been sent out to the membership. The number this year is larger than any previous issue, due in part to a material increase of membership and in addition to the fact that it contains features which heretofore have not appeared in the directory. Aside from containing the names of the officers and members of the association, the constitution and association by-laws, the directory also has the inspection service regulations and a statement outlining the benefits and work covered by the association.

TROUBLE AND LITIGATION

Tacoma, Wash., Sept. 29.—Suit was filed in the superior court last week by the Kanasket Lumber & Shingle Company against the Cascade Timber Company and the Northern Coast Timber Company alleging breach of contract and asking $40,679 damages. The complaint alleges that prior to December 23, 1901, the Cascade Timber Company was owner of a large tract of timber in King County. There being no satisfactory market for cedar at that time, it is alleged, the defendant induced Charles E. Hill, of Tacoma, to erect a shingle mill on the line of the timber company's logging road near Kanasket, agreeing to deliver to him at the mill for ten years at $5.50 a thousand all the logs required to keep the mill in operation. The contract later was assigned by Mr. Hill to the Kanasket Lumber & Shingle Company and, later, the Cascade Timber Company's holdings are said to have been transferred to the Northern Coast Timber Company with the stipulation that the contract for the delivery of the logs was to be fulfilled. After the end of 1907 it is alleged the defendants refused to deliver the logs and the mill was obliged to shut down. The loss to the plaintiff is said to have been as follows: In 1908, $21,209; in 1909, $15,794; in 1910, $12,209; in 1911, $446.

Savannah, Ga., Oct. 1.—A verdict establishing the solvency of the Beach Manufacturing Company has been returned in the district court. It was an involuntary proceeding brought by J. G. Christopher and others to force the Beach company into bankruptcy. The company claims that with its solvency established it will be enabled to dispose of certain properties in Florida for enough money to pay all of its bonded indebtedness and put it upon a firm financial basis. The involuntary bankruptcy proceedings against Leonard Carter, banker, merchant and turpentine and sawmill operator, of Jesup, has also been dismissed in the United States Court. This action was taken by the court after a verdict had been reached in the Beach case. The two actions were similar in many respects. The Carter case was one of the biggest bankruptcy proceedings ever brought in southern Georgia. Counsel was the same in both cases. The Carter case differs from the Beach case in that after the suit had been filed Carter was given notice and appointed receiver, which position he held until the end. He strenuously fought the efforts of some of his creditors to have his estate adjudicated in the bankruptcy court.

Hazel, Ky., Oct. 1.—Reuben W. and Newton L. Chrisman, of R. W. Chrisman & Son, have filed a petition in bankruptcy in the United States District Court at Paducah, both individually and for their firm. The liabilities of the firm are listed at $18,359, with assets of $6,770. Of the liabilities secured claims amount to $7,500 and unsecured $10,859. The stock of goods and material on hand is valued at $5,000 and they have on their books open accounts payable amounting to $250.

Jacksonville, Fla., Oct. 1.—Judge R. M. Call entered an order September 25 in the matter of E. P. Rentz, J. A. Rentz and J. T. Rentz as E. P. Rentz & Sons, and E. P. Rentz individually in bankruptcy. The alleged bankrupts have conformed to all requirements of the law and the order discharges them from all debts and claims made probable and which existed March 4, 1913, when petition for adjudication was filed.

Fort Smith, Ark., Oct. 1.—The Government has entered suit in the United States Court here against the Harris Lumber Company, claiming that it illegally cut 5,000,000 feet of timber from Government lands in Polk County, valued at $24,000. A similar suit was filed against the company several years ago as a corporation, but was dismissed as the concern had dissolved.

Brooklyn, N. Y., Oct. 1.—Involuntary bankruptcy proceedings have been filed against the Metropolis Lumber Company by Charles E. Winant and Edward B. Skinner, who allege they are creditors in the respective sums of $7,500 and $2,431. Assets are given as $500.

New York, Oct. 1.—The Grand Wooden Frame Manufacturing Company (Inc.), 338 Stanton Street, has made an assignment to Harris Goldberg. The company was incorporated in March, 1913, with a capital stock of $10,000.

Marlinton, W. Va., Oct. 1.—The plant and holdings of the Thornwood Lumber Company were sold by Special Receivers Cunningham and Fling to W. S. Linderman, vice president of the Duquesne National Bank of Pittsburgh, for $85,000. Mr. Linderman assumed the liens against the property.

New York-Poughkeepsie, N. Y., Oct. 1.—The Chichester Bros. Chair Company has filed an involuntary petition in bankruptcy.

Pine Bluff, Ark., Oct. 1.—The McDaniel-Baughman Lumber Company has filed a petition in bankruptcy.

Red Bluff, Ark., Oct. 1.—Carey Davenport has filed a petition in bankruptcy.

Connersville, Ind., Oct. 1.—The McFarlan Carriage Company has filed an involuntary petition in bankruptcy.

Milford, Ind., Oct. 1.—The Maple City Manufacturing Company; receiver applied for.

Thomasville, N. C., Oct. 1.—A receiver has been appointed for the Lee Manufacturing Company.

Jamestown, N. Y., Oct. 1.—The Ideal Furniture Company has filed a petition in bankruptcy.

Bloomsburg, Pa., Oct. 1.—A receiver has been appointed for the Monroe-Hall Furniture Company.

Spring, Tex., Oct. 1.—E. R. Wicks has been appointed receiver for the George C. Rice Lumber Company.

HYMENEAL

Helmstetter-Mercer.

Dermott, Ark., Oct. 1.—Carl Helmstetter, general manager of the Bimel-Ashcroft Manufacturing Company, of this city, married recently Miss Ethel Mercer, of Schenectady, N. Y., at Portland, Ind. Miss Mercer was formerly a resident of Dermott, being a sister of Mrs. R. E. V. Bordeaux, but for the last four years has resided in New York. The marriage was a surprise to Dermott people. The bridal couple have returned to Dermott to reside.

Browne-Roberts.

Tacoma, Wash., Oct. 1.—Announcement has been received from Waupaca, Wis., of the marriage of Arthur Graham Browne, vice president of the Nisqually-Russel Car & Locomotive Works, and Miss Elizabeth Roberts, daughter of Mrs. R. N. Roberts, of that city, Wednesday, September 10, at the home of the bride's mother. Mr. and Mrs. Browne will return to Tacoma to make their home.

Everhart-Brown.

Miss Ruth Brown, daughter of Mr. and Mrs. Wade A. Brown, of 3655 Colorado Avenue, Chicago, and George S. Everhart were recently married at Newport, Ky. The groom is vice president of the Giant Grip Horseshoe Company and of the Challoner Company, of Oshkosh, Wis. On their return to Chicago Mr. and Mrs. Everhart will stop at the Hotel La Salle.

Tapp-Clark.

WINSLOW, ARK., Oct. 2.—Ralph W. Tapp, of this city, and Miss Helen Wilson Clark, of Fort Smith, were united in marriage in Van Buren, by the Rev. W. B. Miller of the Presbyterian Church. They will make their home in this city.

Thayer-Crocker.

HOVER, ME., Oct. 1.—Miss Bertha Melia Crocker recently became the wife of Harry Wallace Thayer, who is a member of the lumber firm Ober, Clark & Thayer. After a short honeymoon Mr. and Mrs. Thayer will be at home in Foxcroft.

Hughes-Rodman.

LOUISVILLE, KY., Oct. 1.—Ben Hughes, a well-known lumberman of this city, and Miss Gladys Rodman, of Frankfort, were married September 27 in Frankfort. Mr. and Mrs. Hughes will be at home in Louisville after November 1.

Kenny-Preston.

PROVIDENCE, R. I., Oct. 1.—Miss Helen T. Preston, daughter of Mrs. Rebecca T. Preston, of this city, was married recently to James J. Kenny, a lumber dealer of Apponang.

Kleymeyer-Dickman.

LOUISVILLE, KY., Oct. 1.—Alfred Kleymeyer, superintendent of the West Point Brick & Lumber Co., of West Point, Ky., was married recently to Miss Cora Dickman, of West Point. They included Chicago in the itinerary of their wedding trip.

CONFERENCE ON FIRE PREVENTION.

A national fire prevention conference will be held at Philadelphia, Pa., October 13-18. An effort will be made to create a national association embracing all the fire prevention organizations in the country. As there may be an effort made by the manufacturers of certain substitutes for lumber to put the convention on record as against wood construction in certain forms, prominent lumbermen from various parts of the country will be present to defend the industry they represent and see that lumber is not unjustly discriminated against. The National Lumber Manufacturers' Association will take an active part in the conference.

WEEK'S NEWS OF THE MARKETS.

For Editorial Review of Current Market Conditions See Page 28.

Just as long as the building operations in the city and suburbs continue of present proportions, the yard trade of Chicago will be active. This branch of the industry is really the feature, as the factory interests are buying only for immediate needs. A more gratifying country trade is reported. Yard stocks are in good assortment and probably fully ample to meet all requirements this fall.

Lumber receipts at Chicago during the week ended September 27 aggregated 51,410,000 feet, against 59,797,000 feet for the corresponding week in 1912. Total receipts from January 1 to September 27, 1913, amounted to 21,121,616,000 feet, an increase of 238,909,000 feet over the corresponding period last year. Shipments for the week ended September 27 were 17,251,000 feet, a decrease of 4,428,000 feet over the corresponding week in 1912. Total shipments from January 1 to September 27 aggregated 714,214,000 feet, 45,989,000 feet less than was shipped from Chicago during the same period in 1912. Shingle receipts for the week show an increase of 2,740,000 over the corresponding week in 1912, while total receipts from January 1 to September 27, 1913, show an increase of 72,744,000. Shipments of shingles for the week show a decrease—2,649,000 in amount—over the same week last year, while total shipments show an increase of 53,889,000 over the comparative period from January 1, 1912.

Chicago Lumber Receipts and Shipments.

Reported by the Board of Trade.

RECEIPTS, WEEK ENDED SEPTEMBER 27.

	Lumber.	*Shingles.*
1913	51,410,000	11,899,000
1912	59,797,000	9,159,000
Increase		2,740,000
Decrease	8,387,000	

TOTAL RECEIPTS, JANUARY 1 TO SEPTEMBER 27.

	Lumber.	*Shingles.*
1913	2,121,616,000	380,940,000
1912	1,882,707,000	308,196,000
Increase	238,909,000	72,744,000

SHIPMENTS, WEEK ENDED SEPTEMBER 27.

	Lumber.	*Shingles.*
1913	17,251,000	3,644,000
1912	21,679,000	6,293,000
Decrease	4,428,000	2,649,000

TOTAL SHIPMENTS, JANUARY 1 TO SEPTEMBER 27.

	Lumber.	*Shingles.*
1913	714,214,000	312,770,000
1912	760,203,000	258,881,000
Increase		53,889,000
Decrease	45,989,000	

RECEIPTS BY WATER.

Week ended September 27 ..... 4,997,000 feet

Permits issued by the Chicago building department for week ended October 1 were:

CLASS—	*No.*	*Value.*
Under $1,000	17	$ 9,945
$ 1,000 and under $ 5,000	110	300,850
5,000 and under 10,000	47	304,400
10,000 and under 25,000	30	407,400
25,000 and under 50,000	6	176,000
50,000 and under 100,000	2	140,000
Max Tauber, 1-story brick stable	1	150,000
Viviano Bros., 1- and 3-story brick factory	1	115,000
Charles H. Kussel, 3-story brick apartment building	1	100,000
Totals	215	$ 1,703,595
Average valuation for week	...	7,923
Total previous week	190	2,191,500
Average valuation previous week	...	11,534
Totals corresponding week 1912	182	1,991,200
Totals January 1 to October 1, 1913	7,757	68,521,995
Totals corresponding period 1912	6,664	67,631,110
Totals corresponding period 1911	7,004	87,834,950
Totals corresponding period 1910	7,986	62,791,685
Totals corresponding period 1909	7,394	67,515,534
Totals corresponding period 1908	6,893	45,293,020
Totals corresponding period 1906	6,566	51,152,337
Totals corresponding period 1905	5,580	50,636,815
Totals corresponding period 1904	4,464	32,700,945

NORTHERN PINE.

Chicago.—This wood is reported as doing fairly well in all grades, although the demand for box material is more urgent than for uppers. The white pine of the North is an ideal wood for pattern work; none of the substitutes give nearly as much satisfaction for making good, durable patterns. For this kind of lumber there is no quibbling when it comes to quoting prices. The fall outlook is gradually assuming a better aspect; demand from suburban sections promises to strengthen materially as fall advances.

Minneapolis, Minn.—Though competition from other woods is keen, the fir market being especially weak, business on the whole is good. The active movement of low-grade lumber continues, and call for factory stock is somewhat stronger. Retail yards are not heavy buyers, but their stocks are light and, as fall trade has developed, many of them have been compelled to send in small orders. Farmers are plowing and threshing and therefore country trade is quiet.

Bay City and Saginaw.—The movement of lumber the last week has been mostly of a local character and in car lots. Receipts from outside points are mostly by rail as buyers in Ontario are holding off until the tariff bill becomes a law. There is a moderate trade in pine for sash, doors, blinds, box and house finishing material. The market is steady and firm.

New York—A little better movement was reported for last week and inquiries came along on a better basis. Actual orders are light, but there is a better feeling all around and wholesalers are more encouraged over the outlook. Prices are well maintained and, notwithstanding the dulness in demand, few stocks have been pushed for quick sale.

Buffalo, N. Y.—For the better grades demand is not heavy. It is insisted by many buyers that lumber is likely to be cheaper after the new tariff shall have become effective, although wholesalers say prices will show little or no change. Demand for low grades continues to exceed the supply.

North Tonawanda, N. Y.—The market has been spasmodic. The week before dealers were disposed to characterize the trade as somewhat improved, but consumers are undoubtedly waiting anxiously for the settlement of the tariff question, governing their disposition by ordering only as required. The trend of conditions indicates that stocks in retailers' hands are low but they are using the wholesalers just as they please in their waiting game by letting the big yards hold supplies instead of placing orders for any extended time. The export trade has toned up considerably and is regarded as better than that offered from domestic consumers. August of this year is reported by some dealers to have been in excess of the corresponding month of last season in the amount of business transacted, but September of this season failed to make as good a showing as the corresponding period of 1912.

Pittsburgh, Pa.—Here and there are heard reports of a softening in the prices of low-grade white pine. Tenders of good stocks from mills indicate an accumulation that to move is causing some anxiety and hence the offers below the list. Better grades are about the same but there is considerable complaint of quietness.

EASTERN SPRUCE.

New York—Stock moves slowly at fair prices and, while the demand continues light, wholesalers are finding less difficulty in maintaining prices than two weeks ago. Yards are buying cautiously and as the building situation continues dull there is no inclination to buy beyond current requirements. Stocks among yards are in only fair supply and, while reports from mills indicate a generous assortment, comparatively few consignment shipments are on the way.

Boston, Mass.—Prices are somewhat complicated, with dimension and frame ranging from $24 to $25, base. As for random, all depends on the stock and its length; therefore good random from some of the high-class mills seems to command good prices compared with frames from the same mill. While orders for covering boards are understood to be light, they maintain fairly well the price of $23, although some are offered at 50 cents less. Five-inch matched boards are in fair request at $25 to $25.50, with random about $1 less. Water freights are declining at a time when they usually advance, with several vessels waiting charter in some of the larger eastern lumber shipping ports.

Elkins, W. Va.—With eastern buyers holding off orders in the hope of obtaining price concessions, West Virginia spruce is not moving in as large volume as it moved a month ago. However, with this slight sluggishness opera-

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JENNINGSTON, - - WEST VIRGINIA

GEORGE CRAIG & SONS,
Spruce, Hemlock and Hardwoods
OFFICE: - - PHILADELPHIA, PA.

Cherry River Boom & Lumber Co.
Office:—SCRANTON, PA.
SPRUCE, HEMLOCK AND HARDWOODS
MILLS:—Richwood, Camden-on-Gauley and Holcomb, W. Va.

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Red Gum	*Cottonwood*
Sap Gum	*Yellow Cypress*
Red Oak	*Soft Elm*
White Oak	*White Ash*

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625 STOCK EXCHANGE
LUMBER COMMISSION CHICAGO

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314 Chamber of Commerce, CHICAGO.

tors are not disposed to shave prices, because nearly all of them have orders booked for at least a month ahead and they are inclined to believe that by that time there will be no occasion to make any reduction. While of course slight concessions on odds and ends carried in the yards are possible, upon the general run of stock there have been no concessions.

Pittsburgh, Pa.—Spruce production is much lower than many have believed. The scarcity of this stock has been noted the last week in face of a lighter demand than usual. Most mills report stocks low and it is difficult to obtain prompt shipments. Prices are steady and unchanged.

WHITE CEDAR.

Chicago.—Manufacturers report some sales of poles, which should reduce the visible supply considerably. Short poles seem to have the call at this time. Prices of poles are steady and prospects are that small stocks will be carried over to the spring. Post business is only fair at this time, although dealers are of the opinion that it will improve a little later.

Minneapolis, Minn.—Demand is fair and practically all orders call for rush shipment. Post supplies have been considerably reduced and it is evident that higher values will rule soon. Pole business continues good and an abundance of construction work is under way. The price list on poles is well maintained.

HARDWOODS.

Chicago.—A slight improvement is reported in demand in the last week. Nearly all items on the hardwood list are steady, although now and then concessions are reported being made in an effort to dispose of stocks. This is a bad phase of the market and should be stopped, as it is generally known that price-cutting does not necessarily help in selling lumber, but has the effect of demoralizing the market. Fairly good stocks are available. Hardwoods from both sections—North and South—may be classed as steady to firm. The box situation is good and this has resulted in a steady and heavy call for the lower grades. In the upper grades plain oak continues firm, with demand good. Quarter-sawed oak is showing gradual improvement. Red gum is slow. Cottonwood demand is fair. Birch and maple are moving well; both show slight gains. Soft elm and rock elm are rather active.

Minneapolis, Minn.—Demand for northern hardwoods is light but is in good proportion to the stocks, which seem to be lighter than usual. Low-grade hardwood has been moving actively and is firm, with a tendency to lift prices to winter level. Flooring has been in excellent demand, and the general state of the market is such that holders are awaiting better prices. Southern hardwood seems to have stiffened since recent visits of salesmen representing southern mills.

Bay City and Saginaw.—It is believed operators in the valley will handle as much hardwood the coming fall and winter as usual. Dry stocks are sold up close and a moderate amount of business is reported. Prices are firm.

St. Louis, Mo.—There is a continued fair demand for all items on this list. This is particularly true as to plain sawed white oak. Bone-dry ash is also being called for more freely than it was a short time ago. Choice gum is also in excellent request. Poplar boards are having a good call. All these items are showing slightly stronger prices if early deliveries are stipulated. Cottonwood is in fair request, with lowers moving more freely than for several weeks.

Kansas City, Mo.—Mills with good hardwood stocks appear to be finding buyers and the market has a steadier tone. A recent slight decrease in price stimulated buying somewhat and buyers seem to have accepted that level. Dealers who need stock are paying the price willingly and the situation has steadied the last week. Oak flooring is inactive, but finish is showing more strength.

Memphis, Tenn.—This market continues to broaden and trading is assuming full proportions. Buyers find difficulty in securing all the dry stock they need and display some anxiety regarding securing their requirements, especially in ash in all grades, plain oak and quartered oak. The upper grades of cottonwood are in fairly active call although box boards are slow. Sap gum shows some signs of renewed activity but red gum in the higher grades is not in urgent request. The lower grades of gum are in good demand and prices are well maintained. Poplar is wanted but there is not much for sale in this market. Inquiry for cypress is better and increased firmness is noted in the market for this lumber.

Nashville, Tenn.—Dealers feel much encouraged with the situation. Car shortage has not yet caused any serious delay, but there is stringency in this section, and it is believed that the shortage will be more serious as the season advances. Transactions are noted in plain and quartered oak, ash, poplar and chestnut. One concern reported contracts this week for about twenty-five carloads, mostly oak and some poplar, for export to England and Germany. Most of the local concerns insist on maintaining prices, though it is claimed that round lots have sold at concessions. This seems to be true in cases where there have been accumulations, with a disposition by holders to clean up.

Louisville, Ky.—Business is moving along at a satisfactory rate, September having shown considerable improvement compared with the same month of last year. More snap is exhibited by buyers, and the movement of hardwoods is expected to show a material increase from now on. Demand for quartered oak remains good, and plain oak is also in good call. Poplar is showing some improvement, especially the upper grades, which have been quiet recently. Chestnut remains rather dull, except in the sound wormy grade, which is being bought freely by panel manufacturers. Cottonwood is showing improvement, largely as the result of the renewed activity of the box factories. Ash is holding its own and is in good demand at firm prices. Red gum is also improving, it is stated, and is being taken in large volume.

New Orleans, La.—The market lies about as it was; demand is slowly improving and prices on stock in good request are firming up. Oak and the better grades of gum are probably in seasonable request, with fair call for ash. Export demand for logs is slightly better, but not what it should be at this season.

Lynchburg, Va.—This market shows a steady activity in several lines, but export trade is still reported dull. Demand for oak continues to improve, furniture manufacturers, car builders and shipbuilders taking fair supplies. The red gum market continues slow, and there is no improvement in poplar. Considerable activity in the lower grades of chestnut is evidenced.

Elkins, W. Va.—West Virginia hardwoods continue to respond to a steadily increasing demand, accompanied, however, by no discernible increase in prices. Maple, white and red oak, sound wormy chestnut and basswood are in increased demand. Neither manufacturers nor wholesalers experience any difficulty in disposing of these products, but the car shortage has become so pronounced that this has become a veritable "fly in the ointment" of shippers.

Ashland, Ky.—Oak continues a strong feature of the river market. Quartered dry stock appears to be scarce, with a demand for all that is shipping dry in ones and twos and No. 1 common. Plain sawed, both red and white, is in big demand and all indications point to a firm price basis throughout winter. Demand for construction, car and track timbers is probably the heaviest of the year and fair prices are being realized.

New York—With the exception of poplar wholesalers report a good hardwood business. Stocks are scarce and prices are easily maintained. Quotations are almost at the top, prices running better than two months ago. Stocks among city yards and consumers are light, and with a continuance of the prevailing hand-to-mouth demand there is very little opportunity for accumulating any kind of an assortment. On the other hand, stocks at mill points are in only good supply. This applies especially among the northern hardwood mills, where the log season was poor and very little opportunity was permitted for accumulating stocks. Offerings from southern points are fair.

Buffalo, N. Y.—A steady trade is reported at all the yards, most of them finding business ahead of three or four weeks ago. Mixed-car business is expected to be good this fall and the market is in position to supply such orders. Stocks are of good size and the assortments are about as full as can be found anywhere. The best selling wood is plain oak and prices are firm.

North Tonawanda, N. Y.—While demand has asserted more strength during the last two weeks than formerly, dealers are not optimistic over the prospects for the fall and winter trade. Stock is in fair supply and wholesalers report no difficulty in securing lumber from mill points. Because of the light consumption of lake hardwoods during the last few months dealers will bring forward little more lumber this season, being well supplied for the winter trade.

Boston, Mass.—Hardwood business is fair. Few speak of trade as up to the usual fall level. Although it could be better, it could also be worse. Wholesalers find it requires coaxing and perseverance to secure hardwood flooring orders just now, but prices are firm, indicating to a degree that western manufacturers are not worrying so much over the future as some of their eastern friends.

Pittsburgh, Pa.—Trade has fallen off steadily the last few weeks, prices having softened materially. Low grades have not been so heavily attacked as the better grades. Especially is this the case with oak, which appears to have been suffering from a sudden stoppage in all directions of consumption. Dealers say that export trade has come almost to a standstill and blame this for much of the present weakness. The poplar trade is less seriously affected, and chestnut is in a better position than oak, but the entire hardwood market is suffering from a slump that is more disturbing than for some months. Little demand is reported for hickory or ash. Stocks in hand are small and prices have changed. Good hickory can be easily sold, but there is not sufficient inducement to make an active campaign for it in the small lots available.

Baltimore, Md.—Reports are almost uniformly encouraging. Oak, chestnut and other woods in general use are called for in such volume that the mills have no material accumulations. Inquiry for hardwoods has been encouraging, especially in the northern markets, where the yards, notwithstanding relatively heavy stocks, evince a desire to augment their holdings in order to be in shape for the requirements of the near future. Buying also indicates that lumber is moving in considerable quantities, and price concessions are resisted. The foreign situation is somewhat more promising.

Columbus, Ohio.—Trade in nardwoods has been active during September. The volume of business is ahead of August of this year and also September of last year. Both yards and factories are good purchasers, but the latter are buying the larger volume. Furniture and vehicle concerns are buying well and box concerns are also in the market. Dry stocks are not plentiful in any section. Prices are well maintained and no especial weakness is reported. Yard stocks are light and the policy of retailers is to buy from hand to mouth. Car shortage is hindering shipments and as a result considerable delay is reported. Oak is strong and both quarter-sawed and plain are moving well at firm quotations. Chestnut also is strong and sound wormy is very firm. Basswood and ash are selling well.

Cincinnati, Ohio.—There is a healthy tone to the hardwood market and much activity is looked for. Prices dropped a little several weeks ago but have remained

firm since then. Lack of call for red gum in foreign markets is responsible for the slump in that wood, sap gum being in fair demand in good grades. Demand for sap and red in low grades has been good all year.

HEMLOCK.

Chicago.—A fairly good demand is reported for hemlock in this territory. Prices are steady, notwithstanding that concessions are being made on other kinds of lumber which enter into competition with it. The general outlook is excellent, with no heavy quantities of dry stocks anywhere.

Bay City and Saginaw.—Stocks of hemlock lumber are low and trade is beginning to pick up. Operators say not as much hemlock lumber will be produced the coming year. Dealers are quoting piece stuff and boards at $20 and $22.

New York—Hemlock has no difficulty in holding its former good place in the market. Stocks at mills are scarce and assortments are depleted among suburban yards. Although city building is decidedly backward, a fair run of country building is under way and inquiries and orders continue on a satisfactory basis. Prices hold well, although 50 cents under the top price.

Buffalo, N. Y.—Demand has improved somewhat with the impetus of fall building and the market holds firm. The only cutting done is by West Virginia mills and this interferes to an extent with the business of the Pennsylvania hemlock interests. Lack of heavy supplies at the mills keeps price-cutting from becoming serious. Lake supplies have been coming in liberally.

North Tonawanda, N. Y.—Buying is not as brisk as it was, but dealers are finding plenty to do in filling waiting orders for stock ordered long before the lumber was available. There has been more disposition to order hemlock ahead of consumption than most other woods, and retailers are in possession of fair supplies, as a rule. Prices are being maintained.

Boston, Mass.—Some hemlock is moving, although the movement is not up to the general run of fall business. Wholesalers find difficulty in securing orders at more than $23.50 for good eastern clipped random and some sales are reported at 50 cents less. Reports of sales of 12-inch northern boards at less than the usual difference in price are heard. Eastern random is going by water at less money than a few weeks ago.

Pittsburgh, Pa.—Movement of hemlock is freer and stocks seem a little more plentiful. Prices are remarkably firm with concessions infrequent and, as a rule, within $1.50 off. Eastern markets appear the more active and are taking considerable of the lumber. Stocks are not large for a normal trade.

Columbus, Ohio.—With building operations continuing active the demand for hemlock is steady in every respect. Prices are unchanged and are well upheld. Stocks are not plentiful and a scarcity is reported in certain sections. Retail stocks are light.

POPLAR.

Chicago.—As yet no particular strength in poplar is noticed in this territory. Demand is said to be improving and the trend of the market is steadily toward a firmer basis. Firsts and seconds are in good inquiry. Common and culls are slower.

Buffalo, N. Y.—Trade is fair and concerns making a specialty of panel stock report that business is being done on a small scale. Low grades retain their strength and are in fairly good demand, although much of this stock has been picked up by the box factories.

Ashland, Ky.—The poplar market continues firm; No. 1 and panel 18- to 23-inch in 5/4- and 1-inch has been moving freely and stocks are small; 24-inch and up has been a slow mover with good stocks on hand; in ones and twos the movement has been good, with the demand heavier for 3- and 4-inch than stocks would accommodate, necessitating the refusal of business for these items. Saps and selects, as usual, are always in big demand, and stocks on hand will hardly take care of business on the books; Nos. 1 and 2 common are apparently the slowest movers on the list. The lower grades are generally sold up ahead. Poplar lath are scarce and in big demand.

Baltimore, Md.—The situation with respect to poplar is in the main encouraging, even though the list is not uniformly strong. Some of the lower grades are still being offered in such quantities that a measure of weakness prevails, or rather, the demand has not yet worked up to a point where the offerings are absorbed as rapidly as regard for firmness in the market would demand. But a gradual return to active conditions is being reported, and little difficulty is experienced in placing stocks at this time. As a rule, the mills find takers for their output at figures that are acceptable, and the tendency seems to be toward a higher level.

Columbus, Ohio.—Poplar demand is holding up well for the time of year and an improvement is expected soon. All grades are moving uniformly and as a result there is no accumulation of stocks. Prices are unchanged at the levels which have prevailed for some time. Dry stocks are fairly plentiful. Automobile concerns are buying the wide sizes more actively.

Cincinnati, Ohio.—There is practically no improvement in the poplar situation, only the low grades being in demand. In face of such a prolonged lack of demand it is remarkable how the price is held up and manufacturers say that cheaper poplar is out of the question.

FIR, SPRUCE, CEDAR

Chicago.—Conditions are still very unsatisfactory in most branches of the lumber trade. Railroad business has not picked up this fall as had been hoped. Some yard stock is steadily being sold, but the market lacks snap.

Tacoma, Wash.—Some slight strengthening is noticeable in spots that would indicate natural fall demand is beginning in a quiet way. In other places the market is as weak as for the last few months. Prices continue low and uncertain with competition keen. The mills are mostly curtailing output. None of the local mills have shut down entirely. Logs have been showing weakness. There is a surplus and camps are shutting down. Despite the condition of the lumber and log market, dealers report a stronger inquiry for timberlands than at any other time within a year.

Portland, Ore.—The volume of shipments to foreign destinations continues heavy, and the quantity going to California by water is fair. Rail shipments are about the average. The log market shows no change. Several mills have discontinued operating nights and as a result the total output has been curtailed considerably.

Kansas City, Mo.—Reduction in price undoubtedly would be followed by a curtailment of the mill cut, as the margin of profit is very narrow and manufacturers have been complaining on that score. There is very little demand in this territory, but that condition has obtained so long that wholesalers have about given up the notion of pushing for business. The market on the whole appears to be in better shape than at any other time the last month. Red cedar siding still is weak and may be had at $4 off.

WESTERN PINE.

Chicago.—Demand for California white pine and sugar pine continues good and there is also a fair business being done in Inland Empire shop lumber. Prices are reported firm.

Kansas City, Mo.—Few contracts of importance are being placed and yard demand is light. Prices are fairly steady as the supply at the mills is not large. Salesmen report a fair trade to the east and north.

REDWOOD.

San Francisco.—Conditions have not improved materially in the domestic market, although there has been a recovery from the drop in prices and there is an increase in inquiries. The offshore outlook is fair.

Kansas City, Mo.—There is scarcely enough demand for redwood to make any definite statement of the market possible. The mills are not paying a great deal of attention to this territory and so the price is holding fairly firm, but orders are so rare that wholesalers have almost forgotten what to quote.

NORTH CAROLINA PINE.

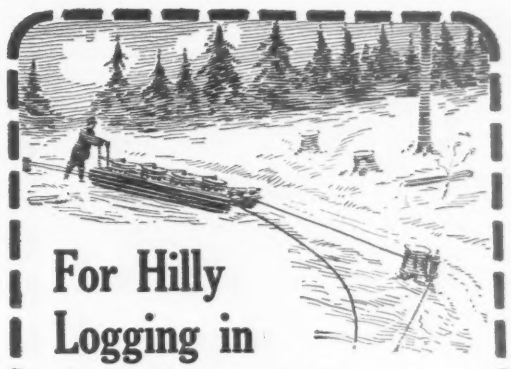
Norfolk, Va.—Sales of North Carolina pine the last week showed a slight increase, notably in edge box and edge culls, with a small falling off in sales of the better grades of rough lumber. Dressed items also showed some increase. Prices as a whole were slightly better than during the week previous. No. 1 (4/4) edge sold at $27.50 to $29.25; No. 2 at $24.50 to $25.50; No. 3 at $18.50 to $19. Edge box (4/4) sold all the way from $14.50 to $15.50, the average price for over 3,000,000 feet being $15. The general strength of this item will warrant a quick advance should demand continue to increase. Eight-inch box sold at $16.50 to $17.25; 10-inch at $17.50 to $18.50; twelve-inch, $18 to $19. Stock sizes of culls and red heart sold at $3 less than box prices. Edge box (5/4) sold at $15.50 to $16.50; edge box (6/4) same as 5/4. Nos. 1 and 2 bark strips sold at $18; box bark strips $12 to $13. Dressed stock boards and rift flooring continue to show improvement in prices notwithstanding the light sales. No. 1 (13/16") flooring sold at $28 to $30; No. 2 at $26.50 to $27.50; No. 3, $22 to $23.50; No. 4, $16 to $17. No. 1 (3/8") ceiling, $18; No. 2, $16.25 to $17.50; No. 3, $13.50 to $14; No. 4, $11. No. 1 (7/16") ceiling sold at from $19.25 to $20.25; No. 2, $18 to $19; No. 3, $14.75 to $16.00; No. 4, $12 to $13. No. 1 (13/16") partition sold at $29.25 to $30.50; No. 2, $27.50 to $28.75; No. 3, $22.50 to $23. Nos. 1 and 2 bark strip partition sold at $23 to $23.50; six-inch roofers, $16.75 to $17.50; eight-inch, $17.25 to $18.25; ten-inch, $18.25; twelve-inch, $18 to $19. Lath sold at from $2.90 to $3.

New York—Offerings from mills are ample and, notwithstanding reports as to probable curtailment, no apparent effort is made to restrict offerings for this market. Prices are irregular, but the inquiry has improved somewhat and a slight strengthening in quotations is reported. Lowest prices apparently were reached two weeks ago, since which time wholesalers have been slowly adding to their figures, and orders are better than they were at that time.

Buffalo, N. Y.—The market for shortleaf stock shows little change and wholesalers regard prices as down to a fair basis. Retailers are holding off as much as possible, but are obliged to take in some stock right along, as their buying has been of a hand-to-mouth character for a long period. Building is going ahead in fair shape through this territory.

Boston, Mass.—This market is about at a standstill, although neither wholesaler or retailer is overburdened with orders. There seems to be an undercurrent that is putting prices up a peg. Some wholesalers who have been talking $19 to $19.25 for 6-inch roofers are now holding for $19.50, with 8-inch about $1 more.

Baltimore, Md.—The feeling in the North Carolina pine trade is steadily improving and some recovery in the price of box lumber is reported. For several months quotations have been around $15 a thousand, with occasional sales at a lower figure, but, of late, it is said, the price has been marked up to $16 and even $16.50, which latter is the figure now given in answer to inquiries. Of course, more or less hesitancy is the result, but the



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holders of stocks appear to be firm and determined to wait until the buyers work up to their ideas of value. Builders are buying with greater freedom and the outlook is regarded as decidedly encouraging.

SOUTHERN PINE.

Chicago.—If there has been any improvement in the yellow pine market this week it has been very small. It is said that the market is still controlled by the buyers so far as prices are concerned. There are, of course, denials and counter assertions that prices are gradually advancing. In some lines mill stocks are rather generally run down and it may be that urgent need of scarce items leads buyers to pay prices asked by those who hold such stock. Railroads are still out of the market. Yards in Chicago have a steady call for building material, but they seem to have fairly good assortments from which to draw.

Kansas City, Mo.—An increase in the number of country orders is the encouraging feature of the week. Orders are for prompt shipment, which shows that the country dealers have held off their orders until the customer was actually in sight and that stocks at the yards are in such shape that orders there must mean immediate orders to the mills. The same is true of the yards in this city, although the Kansas City retailers are not finding it necessary to buy much stock to meet their demands. One close follower of the market predicts that the price will be at least $2 higher in April.

St. Louis, Mo.—While some of the larger distributers complain of conditions, most of them say the volume of business they are doing is greater than they expected earlier in the season. Orders are coming in from all sources. Prices on some items are a little stronger than they were a few weeks ago.

New Orleans, La.—Demand gradually improves, but prices continue weak. There is no speculative buying and the indicated increase of demand, which is not large enough to be particularly encouraging, represents a corresponding increase, it is believed, in immediate consumption. Many manufacturers insist that they are refusing to book orders on the basis of present quotations, but it appears that the orders are placed somewhere and somehow. A few say they are getting better prices on some items than were obtainable two weeks ago. But everybody agrees that the market is in unsatisfactory condition. On the export side an increased movement is noted, with reports that quotations are firmer on primes and timbers.

New York—Demand continues light but a better inquiry is noted. Stocks are freely offered and reports are current that a number of mills are selling at an actual loss. This has caused some report as to curtailment and as there is nothing in sight to indicate a heavy fall trade some credence is placed in the reported curtailment. Prices are the same as previously reported.

Buffalo, N. Y.—Demand shows up seasonably well, though there is little increase as compared with early last month. Stocks are obtainable at comparatively low prices from some mills, although the larger ones say they are getting better figures than they got during the summer.

Boston, Mass.—Anything on the bargain counter is what moves in southern pine. The market is exceedingly quiet and a low quotation travels fast among the dealers, not that they inform each other exactly, but they are about all "doing the same" when it comes to the somewhat unusual matter of placing an order.

Baltimore, Md.—The situation shows some improvement, though recovery is perhaps not as noticeable as with respect to shortleaf pine. Local holdings are not large and, because of the tendency to hold out for an advance, buyers defer wants as long as possible, which keeps down the movement but can not affect permanently the revival, indications whereof are to be seen.

Pittsburgh, Pa.—From the Pittsburgh viewpoint yellow pine is showing further weakness in prices. There is considerable evidence of this in the lists from mills of stocks on hand which indicate rapidly swelling yard piles. Most of the trade regards the present as a turning point and do not look for much further weakness. Buying has started and so has a movement toward curtailment of production among many of the mills of the South.

Cincinnati, Ohio.—Demand continues good but has had no effect on retail buying. Prices seem to be at rock-bottom.

CYPRESS.

New Orleans, La.—No new features have developed. Mixed-car business is of about the usual volume and requests to rush shipment are as frequent as ever. The mills are carrying perhaps 75 percent of the total cypress stocks, retail yards apparently being disposed to limit their holdings rigidly and buying for immediate needs only. Consumption of the wood has so broadened and advanced, however, that the purchases even under these circumstances aggregate a considerable business. Prices are firm. Along the Southern Pacific the car situation is unsatisfactory, but so far shipments are being made with reasonable dispatch. Some increase of railroad buying is noted.

Chicago.—There has been a little improvement in call this week. Mixed cars are still in vogue. Tank and factory stocks are slow movers. Considerable pecky has been sold recently. This class of lumber is reported in poor assortment.

Kansas City, Mo.—Rains in Louisiana have delayed logging in the cypress woods the last week and it is not improbable that the result will be a stiffening in prices, although the cypress market is not subject to the fluctuations that characterize other woods on this market. So far the price has shown no change and the demand continues steady. Dealers are well satisfied with conditions.

St. Louis, Mo.—The outlook is much brighter. Stock is moving more lively and orders are coming in more freely. Prices are beginning to stiffen and the leading distributers are much more encouraged over the prospects.

New York—Quotations are slightly firmer, some mills reporting that there is no reason for any price shading and that stocks at shipping points are not nearly as large as generally supposed. Large yards here are well supplied with assortments large enough to take care of the small current business that is moving. Orders from small consumers continue on a hand-to-mouth basis, with little prospect of straight carload buying during the coming few weeks. Inquiries from the outlying yards show signs of improvement.

Buffalo, N. Y.—There is about the usual seasonable demand, principally for tank stock and door material, with prices fairly steady. The mills apparently have stock enough to supply all needs and no complaint reaches here of lack of cars.

Boston, Mass.—This market, although not very active, and which had been stiff as to prices, has shown signs of quivering lately. Some yards have taken on considerable cypress compared with the general market and it is doubtful if they can be induced to buy even if price concessions are made until the outlook is brighter.

Baltimore, Md.—It can not be said that a positive advance in quotations has taken place, but the tone of the market is stronger, and the range of prices shows more firmness. Progress toward better conditions is gradual, but appears to be steady.

Cincinnati, Ohio.—Demand continues good for low grades and No. 1 shop. Dressed stock for building purposes is going much better, due to the increasing building operations. Yardmen are moderate buyers but prices remain firm.

Columbus, Ohio.—Cypress demand has been steady during the week. The volume of business is about the same and prices are firm at the low figures which have prevailed for several months. The rule is to give large concessions off the list. Eastern orders are still the best. Some trouble over shipments is reported because of car shortage. Dry stocks are plentiful.

SHINGLES AND LATH.

Chicago.—The red cedar shingle market continues quiet. Reports are reaching here that one mill after another is closing down on account of low prices, but the market continues weak and unsettled. Demand is of an intermittent nature. Clears are bringing $3.07 and stars $2.64, Chicago basis. White cedars are steady, with demand fair. Lath continues strong and are reported to be in active request.

Minneapolis, Minn.—Call for clears is light and the market weak, with offerings at $1.95 to $2. The market for stars is somewhat more active but is also weak, quotations ranging from $1.55 to $1.60 at the mill. These are conceded to be bedrock prices and a recovery is expected soon.

Tacoma, Wash.—Red cedar shingles continue weak, particularly clears, but millmen say they are looking for October to show improvement. There is some buying all along and a considerable volume of trade. Normally October is a good shingle month and manufacturers think inquiries that have been coming in indicate a stronger market than September with possible price advances. The present basis they believe to be at bedrock.

Kansas City, Mo.—Demand for red cedar shingles is somewhat better from the country yards and buyers insist on quick shipments. Also there is a decided curtailment of production at the mills. Reports here are to the effect that between twenty-five and thirty mills have closed the last week. Prices, however, have not advanced, although there is a somewhat stronger tone to the market. The asking price here is about $1.60, Coast basis, for extra stars and $2, Coast basis, for extra clears.

New Orleans, La.—Brisk call continues for cypress lath and shingles, though "bests" are not moving so well as they did two weeks ago. Mill stocks are low, with assortments more or less broken. Prices rule firm and unchanged.

Buffalo, N. Y.—Demand for red cedars is seasonably fair and prices are unusually low. The mills claim that they are selling shingles below cost and say that prices will have to go up. The stopping of shipments of transit cars from the Coast is expected to bring about a firmer level of quotations.

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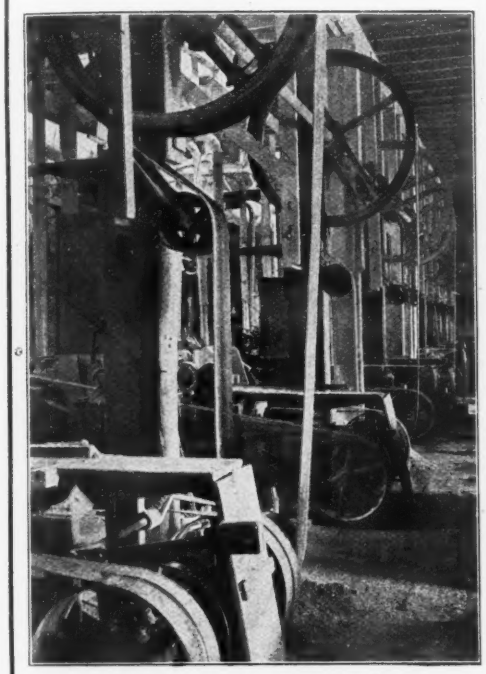

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North Tonawanda, N. Y.—Many wholesalers who have stock to arrive this fall got much of it under way before October 1, thereby securing the benefit of the lake and rail rate, the tariff on these shipments being withdrawn after the last day of September. In most instances the stock was purchased at the low figures which have prevailed during the last few weeks. They are consigned for yard storage and the wholesalers expect to dispose of them at the advance which they believe will follow the closing down of the mills.

Boston, Mass.—Shingles are giving the trade somewhat of a problem to solve as to both the present and the future market. Although business is light, there is less talk of good eastern cedar shingles at $3.75 for extras and $3.50 for clears. Manufacturers who were taking orders at these prices appear to have enough to enable them to withdraw their quotations, but it would probably be impossible to still buy at the foregoing prices. The lath market is quiet at $3.90 for 1 7/16 and $4.40 for 1 5/8. Some cargoes are being offered at about $4 for 1½-inch, which has started some manufacturers to piling in expectation of a higher market.

Columbus, Ohio.—The single market continues rather weak but no further decline in red cedar shingle quotations is reported. Dealers' stocks appear to be sufficient for immediate needs. Some delay in shipments from the Coast is reported. The lath trade is steady but decreasing in volume.

Cincinnati, Ohio.—Retailers are gradually disposing of the heavy stocks they have been carrying all season. Very little buying is reported.

COOPERAGE.

Chicago.—No change is noticed in tight cooperage. Offerings of staves and heading exceed all demands. These conditions prevail all over this country and Europe, where the unusual supply of second-hand barrels meets requirements. Nominal prices for white oak oil staves continue at $30 to $31 a thousand; red oak at $28 to $29 a thousand. On account of the lower prices for the latter, cheaper barrels made from them are acceptable now to the packers. The board of trade rule now allows them in lard tierces. Ash pork barrels are accepted now as "regular." Prices for ash pork, also ash tierces, are somewhat lower than oak. The kraut and pickle demand has been fair and furnished employment to many shops that otherwise would have been idle. The old demand for wooden tight barrel hoops has been superseded by iron hoops. A few cars of hickory box straps find sale at low prices, but iron straps are gradually taking their place. Whisky staves are slow. The loss in the corn crop will affect the price and demand for barrels. Slack staves are on the downward trend, many intelligent manufacturers realize the comparatively small demand and are accepting all orders that lower prices will secure. Coiled hoops are easy at lower prices. Heading for salt and cement barrels is very quiet, but basswood flour is wanted at firmer prices. There is no demand for ash butter tub staves, which are taking Chicago rate over $11 a thousand. Five and one-half-foot ash hoops are unsalable, but a few cars of 4½-foot can be sold at fair prices, say A. & H. Gates in their report on market conditions.

White oak, oil staves, per M	30.00	to	31.00
No. 1, 28½-inch Michigan elm flour staves, net M	9.00		
No. 1, 28½-inch Wisconsin elm flour staves, net M	9.00		
No. 2, 28½-inch elm staves, net M	Nominal		5.50
No. 1, 17⅛-inch kiln dried basswood heading, per set	.07¼		
No. 1, 17⅛-inch gum heading, per set, nominal	No demand		
No. 1, 28½-inch gum staves, nominal	No demand		
M. R., 30-inch gum staves	8.25		
Patent coiled elm hoops, 6-foot, per M	9.50		
Patent coiled elm hoops, 5½-foot, per M	9.50	to	10.00
Patent coiled elm hoops, 5-foot, per M	9.50		
Half barrel staves, elm, per M	6.00	to	6.50
Half barrel basswood heading, per set	.05		
Hickory hoops, flour barrel, per M	5.00	to	6.00
Hickory hoops, half barrel, per M	None wanted		
Head lining, car lots, per M, 12-inch	.30	to	.35
Head lining, small lots, per M, 18-inch			.60
Ten-round hoop barrels			.46
Eight patent hoop barrels			.46
Hickory hoops, flour barrels, per M			.45
Two patent and six hickory hoop barrels			.45
Four patent and four wire hoop barrels			.45
Half barrel, 6-hoop	.37	to	.38
No. 1 white ash butter tub staves	11.00		
Flat ash, 5½-foot hoop, per M	4.75		
White oak, oil staves, per M	30.00	to	31.00
Red oak, oil staves, per M	28.00	to	29.00
Tierce hoops	No demand		
Hickory box straps	14.00		
Lard tierces	1.15	to	1.27½
Pork barrels	.95	to	1.02
Pork barrels, ash	.90	to	.95

Do You Want to Save Money?

Of course you do. Everybody does. You can waste your money in poor advertising so fast you will wonder where it went.

Good advertising costs money. Advertising that is cheap in price must of necessity be cheap in service. Money spent for good service is well spent.

THE RIGHT WAY

To get what you want is to advertise in the AMERICAN LUMBERMAN. Your advertisement inserted in the Wanted and For Sale Department would be seen by the whole lumber world in general, as well as all other associated industries.

THE LARGE CIRCULATION

of the AMERICAN LUMBERMAN is what brings the advertiser returns. Perhaps you don't know what a good salesman the AMERICAN LUMBERMAN is. Just think of the many thousands of readers who read the classified ads each week; in fact, it reaches buyers of most everything.

No matter what you want or have to sell, insert an ad in the "GREATEST LUMBER JOURNAL ON EARTH," THE AMERICAN LUMBERMAN, 431 So. Dearborn St., Chicago.

WANTED—AND FOR SALE DEPARTMENT

Advertisements will be inserted in this department at the following rates:

For one week	25 cents a line.
For two weeks	45 cents a line.
For three weeks	60 cents a line.
For four weeks	75 cents a line.

Nine words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.

Remittances to accompany the order. No extra charge for copies of paper containing advertisement, copy must be in this office not later than Wednesday morning in order to secure insertion in regular department. All advertisements received later will be placed under heading Too Late to Classify.

Too Late To Classify

FOR SALE

Or will exchange for the stock or an interest in acceptable timber proposition.

Complete equipment of single band mill, good as new, including all shafting and belting, electric light plant and filing room machinery.

1—Barnhart Log Loader.
1—50 ton Shay Locomotive.
1—85 ton Shay Locomotive.
30—Logging Cars, Iron Frame.

Address "G. 130," care AMERICAN LUMBERMAN.

WOULD LIKE TO GET IN TOUCH

With some mill that has odds and ends in lumber for sale cheap. Will consider buying regular stock, but must be cheap. State particulars and price in reply.

Address "G. 128," care AMERICAN LUMBERMAN.

FOREMAN & MILLWRIGHT

Experienced man wants position at good mill in South. State salary. Address "G. 129," care AMERICAN LUMBERMAN.

WANTED—TO BUY INTEREST IN RETAIL

Lumber and building supply yard, middle western states.

Address "G. 127," care AMERICAN LUMBERMAN.

TOPOGRAPHICAL SURVEYS & LOGGING MAPS

Read what was said on this subject at the Portland Logging Congress.

We are prepared to make "Topog" Maps, timber estimates and plans for every need.

Plan definitely for efficiency.

CLARK, LYFORD & STERLING, Real Estate Trust Bldg., Philadelphia, Pa.

WANTED—THE NAME OF EVERY COMPANY

Operating a store without Allison Coupon Books. On receipt of name we send our catalog.

ALLISON COUPON CO., Indianapolis, Ind.

TOBACCO FROM KENTUCKY

Pure old leaf, best for chewing and smoking; sample pound, prepaid, 25c.

DOLAN & CO., 1135 Market, Louisville, Ky.

Wanted: Employees

WANTED—COMPETENT OFFICE MANAGER.

Must be expert accountant and capable of systematizing office work and handling large office force as well as being a good correspondent, thoroughly familiar with the producing and consuming ends of the wholesale hardwood business, by a concern doing over $1,000,000.00 per year in a wholesale way in West Virginia and southern hardwoods, as well as manufacturing over 75,000 feet per day at our own mill. Main office Cincinnati. A splendid opportunity for a man capable of handling a large volume of office work.

Address "G. 126," care AMERICAN LUMBERMAN.

WANTED—SUPT. OF LOGGING OPERATIONS.

capacity 300,000 ft. daily. Applicants state age, experience, etc., and send letters of reference.

BOX 786, Norfolk, Va.

WANTED—YOUNG MAN BOOKKEEPER AND

Stenographer for hardwood mill, commissary, etc., in Mississippi. Must have one who has had experience in similar capacity. Address "G. 125," care AMERICAN LUMBERMAN.

ORDER PUSHER.

A competent millwork man to supervise order department and route work through factory. Only an able and aggressive young man who has had experience in handling orders can fill this position. State experience, salary required and give references in applying.

CREAM CITY SASH & DOOR CO., Milwaukee, Wis.

WANTED—GOOD MILL MAN

Who understands all kinds of planing mill machinery. Must have reference. Steady employment. Address

THE MASSILLON LUMBER CO., Massillon, O.

WANTED—YARD MAN WHO HAS HAD RETAIL

Yard experience, and understands grading rough stock. Must be sober and able to handle men to advantage. State experience, age, and salary expected. Would prefer man between 35 and 45 years of age.

Address BOX 448, Youngstown, Ohio.

ATTENTION BOOKKEEPERS!

Read the American Adding Machine Proposition in the AMERICAN LUMBERMAN this week. Tell them you saw their advertisement in this paper when you write them for their special offer to the readers of the AMERICAN LUMBERMAN.

WANTED—TRAINMASTER FOR LARGE

Logging operation in Alabama. Must have fair education, experience in handling southern labor, and some knowledge of R. R. construction. Apply with references,

"G. 100," care AMERICAN LUMBERMAN.

Wanted: Employees

WANTED—ESTIMATOR AND DRAFTSMAN

For southern millwork factory manufacturing both yellow pine and hardwood. Prefer a young man. Must be strictly sober, capable, a good salesman, and thorough hustler. Apply in own handwriting. State age, experience, give references, and salary expected. Say when could report for work, and if possible enclose sample of estimate showing method of listing from plans.

Address "G. 102," care AMERICAN LUMBERMAN.

WANTED—YOUNG MAN TO TAKE CHARGE

Of shipping for mill cutting poplar and small amount oak. Must have ability and be able to handle inspectors and thoroughly familiar with both export and domestic grades. Want high class man with energy and brains. If you know you have neither, don't waste your time replying. Give full particulars, references and salary expected first letter. Located in southern city.

Address "G. 113," care AMERICAN LUMBERMAN.

WANTED—HARDWOOD FLOORING MILL MAN

One capable of superintending erection of the mill and placing of the machines and putting up of the dry kiln; in fact, a millwright and should also be able to fix his own saws and knives if necessary.

Address "G. 122," care AMERICAN LUMBERMAN.

WANTED—COMMISSION MEN

To sell 2x4's, 9, 10 and 12' No. 1 yellow pine for us. Straight or mixed cars either length. Liberal commissions. H. A. HOLLOWELL & CO., 4th Ave., Cincinnati, Ohio.

WANTED—MILL SUPT. NEW MILL,

Double band, hardwood. Unusually desirable location and position for a man who can secure results. State salary, give references. Address

"F. 123," care AMERICAN LUMBERMAN.

WANTED—CABINET FOREMAN

For interior finish factory. Must be capable of handling 25 or 30 men. Kind of work, interior finish for fine residences and apartment houses, store and bank fixture work.

Address "F. 124," care AMERICAN LUMBERMAN.

WANTED—A MANAGER FOR A YAR

Located in a good town in central Illinois. Must be experienced in the retail business, industrious, wide awake and with good habits. Address

"F. 105," care AMERICAN LUMBERMAN.

WANTED—LUMBER MILL SUPERINTENDENT

To take entire charge of soft wood sawing and planing plant located in northern New York. High class man desired. State age, experience, ability to figure costs and salary expected. Address

"F. 113," care AMERICAN LUMBERMAN.

WANT—HIGH GRADE WOOD'S SUPERINTEND'T

One who can make good on hardwood and white pine. Railroad operation. Advise age and references. Apply SCHMICK HANDLE & LUMBER CO., Oakland, Maine.

WANTED—BY LINE YARD CONCERN

In Oklahoma, an A1 bookkeeper; competent to keep books of corporation and compile annual reports, etc. None but first class men need apply with best of reference. State whether married or single.

Address "C. 128," care AMERICAN LUMBERMAN.

WANTED—ORDER CLERK

A large sash and door manufacturing company wants a young man who is experienced and well qualified to enter sash and door orders such as are received from country lumber yards.

Address "B. 101," care AMERICAN LUMBERMAN.

Wanted: Mill Mechanics

A THOROUGHLY COMPETENT MAN

To take charge of vertical and horizontal resaws, surfacer, etc. Steady position. Must have experience in hardwoods.

THE SUN LUMBER CO., Weston, W. Va.

WANTED—TO COMMUNICATE WITH A

First class Climax locomotive engineer for log woods, one who can keep up his engine. Must be first class man.

Address "G. 104," care AMERICAN LUMBERMAN.

LUMBER SHED CONSTRUCTION.

Met L. Saley's latest book for retail lumbermen on the construction of lumber sheds, offices and other buildings, with plant. Some very handy and useful "Shed and Yard Conveniences" are also illustrated and described. $1.50 postpaid.

AMERICAN LUMBERMAN, 431 S. Dearborn St., Chicago.

Wanted: Salesmen

WANTED—A FIRST CLASS SALESMAN

To sell yellow pine and red cypress; a man who is acquainted with the trade in southern Wisconsin and northern Illinois. Salesman wanted who can command business. Good salary.

Address "G. 103," care AMERICAN LUMBERMAN.

WANTED SALESMAN

Traveling Iowa, So. Dakota, Nebraska, Illinois and Missouri, to sell our Michigan White Cedar Fence Posts on commission. Quality and supply first-class.

Address "C. 105," care AMERICAN LUMBERMAN.

SALESMAN WANTED BY LARGE

Manufacturing concern for northern hardwood and hemlock, to call on trade in lower Michigan, Indiana, Ohio and eastern states. Address "F. 102," care AMERICAN LUMBERMAN.

WANTED—SASH AND DOOR SALESMAN

For western Kentucky and southern Indiana. State age, experience and salary expected.

W. J. HUGHES & SONS CO., Louisville, Ky.

WANTED—LUMBER SALESMAN

To sell from stock of first-class White Cedar Posts and Shingles in the States of Michigan, Ohio, Wisconsin, Illinois.

Address "E. 107," care AMERICAN LUMBERMAN.

"CHAPIN'S LUMBER RECKONER"

Reduces to board measure lumber, scantling, square timber and saw logs. Morocco $3, cloth $2, postpaid. Let us send you sample pages. AMERICAN LUMBERMAN, Chicago.

Wanted: Employment

SALES MANAGER.

Do you want to engage the services of a young man whose experience covers every phase in the manufacture and selling of yellow pine, N. C. pine and cypress, to manage your office in New York or any of the eastern cities, or at your mill providing the location is healthy? If you appreciate a man who can sell your lumber, keep up collections, and hold and increase your trade, and are a well established manufacturer willing to pay a good salary and commission, I shall be glad to hear from you at once.

Address "F. 122," care AMERICAN LUMBERMAN.

POSITION SELLING YELLOW PINE

By young man under thirty, ten years' retail experience, all capacities. Competent. References. Want interview.

Address "F. 127," care AMERICAN LUMBERMAN.

MAN WITH EXECUTIVE ABILITY

And experience in factory superintendence, buying and selling lumber and general millwork and an expert in office methods, desires a position with a first class manufacturing or wholesaling concern. Is familiar with west coast forest products and has personal acquaintance with principal sawmill and factory operators in Oregon and Washington.

Address "F. 121," care AMERICAN LUMBERMAN.

WANTED. EXPERIENCED BOOKKEEPER AND

General office man now employed desires change. Could make a small cash investment in a good business and take an active part. Can furnish best of references.

Address "G. 124," care AMERICAN LUMBERMAN.

EXPERT BOOKKEEPER EXECUTIVE ABILITY

Young married man, wholesale and operative experience sawmill, box factory, planing mill, yellow and white pine. Fourteen years and no lost time, desire change; healthy location. Salary secondary consideration where there is a good opportunity. Address

"G. 101," care AMERICAN LUMBERMAN.

OPEN FOR ENGAGEMENT

As superintendent or general manager of extensive logging operations. Experienced in all classes of logging as well as location and construction of logging railroads. Can furnish A1 references. Address

"G. 107," care AMERICAN LUMBERMAN.

WANTED—OPPORTUNITY TO EITHER WORK

For, or represent some good manufacturing or wholesale concerns after January 1st. Fifteen years' experience in the office and on the road buying and selling lumber. Could invest $5,000 if necessary. Best of references furnished and required. Employed.

Address "G. 106," care AMERICAN LUMBERMAN.

YOUNG MAN THOROUGH LBR. EXPERIENCE

Three years line yard manager. Experienced in bookkeeping, collections, stock arrangements, advertising and sales. Married, American, with college education. A hustler who can deliver the goods.

Address "S. 76," care AMERICAN LUMBERMAN.

DRAFTSMAN, DETAILER & BILLER

On building material, bank, store and office fixtures, 36 years old, wants position with good firm; best references.

Address "G. 114," care AMERICAN LUMBERMAN.

AN ADVERTISEMENT

in the AMERICAN LUMBERMAN would be seen by the very people who are interested—it

WILL

always carry your message to more readers—bring better returns than any other medium and

MAKE

you money—send your advertisement to the "Greatest Lumber Journal on Earth" and get quick results all the time—it is a

GOOD

thing to be in good company—besides it supplies many wants each day and has no equal as a salesman.

Send your advertisement to

THE AMERICAN LUMBERMAN,

431 So. Dearborn St.,

Chicago.

WANTED—POSITION AS GENERAL MANAGER

Southern hardwood and pine experience. 15 years general manager of operations cutting 20 million up. Familiar all details. Will work salary and percentage if proposition is good. Address "G. 116," care AMERICAN LUMBERMAN.

EXPERIENCED LUMBER & TIE INSPECTOR

Yellow pine, wants situation. Age 28.

Address "G. 112," care AMERICAN LUMBERMAN.

OFFICE OR SALES MANAGER OR ON THE ROAD

Fifteen years' experience in hardwood lumber and box shook business. A1 references.

Address "G. 110," care AMERICAN LUMBERMAN.

WANTED—POSITION AS BAND SAWYER.

Can furnish absolutely first class references.

Address "G. 108," care AMERICAN LUMBERMAN.

WANTED POSITION BY BAND SAW FILER

Who will guarantee to improve your saw service and run your saws without cracks or ask no pay.

Address "G. 109," care AMERICAN LUMBERMAN.

EXPERIENCED LOGGING SUPERINTENDENT

Wants situation. Can do anything in the logging line. My own surveying, estimating, running tram road lines and anything in the woods. Would like position by January 1st, 1914, or before. Can furnish first class references.

Address "G. 123," care AMERICAN LUMBERMAN.

SALESMAN AT LIBERTY NOVEMBER 1ST

Fourteen years of selling experience with yellow pine, cypress and all Pacific coast products. Excellent record and reason for changing.

Address "G. 120," care AMERICAN LUMBERMAN.

FIRST CLASS BOOKKEEPER

With fifteen years' lumber experience, thoroughly qualified for responsible duties, seeks position. West or South preferred; best references.

Address "G. 121," care AMERICAN LUMBERMAN.

WANTED—POSITION BY YOUNG MAN

Who understands millwork, to solicit same from the retail trade in New Jersey, New York and Pennsylvania. Moderate salary to begin with.

Address "G. 118," care AMERICAN LUMBERMAN.

Wanted: Employment

AN EXPERIENCED LUMBERMAN

Of 20 years' cypress, hardwoods and pine, well known o the trade, will be open for a position in about 60 to 90 day time. Has been in full charge of large operations fro stump to car for past 15 years and can show first class r sults. Can take complete charge of any sized plant, in cluding sales department. Will require good salary and pe centage of profits. Address

"F. 101," care AMERICAN LUMBERMAN.

STENOGRAPHER AND BOOKKEEPER, LADY

With several years' lumber experience, desires position aft r Oct. 1st. Know both manufacturing and wholesale en . Best of references. No objection to leaving city.

Address "F. 129," care AMERICAN LUMBERMAN.

PARTY PERSONALLY ACQUAINTED WITH

All principal sash and door factories and sawmills in Orego and Washington, and who conducted a purchasing bure at Tacoma for four years for eastern concerns, invites corr spondence with responsible parties who contemplate arran ing for coast representation, either exclusive or jointly wi others. Address "F. 130," care AMERICAN LUMBERMAN.

WANTED—BY SOBER, ENERGETIC

Well educated man of 27 position with retail lumber firm as salesman and collector or general office man. Have worked in lumber business over six years. References.

Address "F. 131," care AMERICAN LUMBERMAN.

FIRST CLASS BOOKKEEPER AND

General office man desires position. Ten years' lumber manufacturing experience. Familiar with cost accounting, freight rates and selling. Best of references.

Address "E. 120," care AMERICAN LUMBERMAN.

LUMBERMAN WANTS POSITION

Twenty-five years in woods, mill, yard, and office in Michigan, Arkansas, Oklahoma and Montana. Logging plans and timber estimating a specialty. Hardwoods or pine. Seven years' executive experience. Now employed. Have successfully passed U. S. Civil Service examinations for Timber Estimator, Scaler and Forest Ranger. For particulars address—with a statement of your wants—"H. T. W. S.,"

care AMERICAN LUMBERMAN.

MANAGER WANTS POSITION IN CHARGE

Of 75 to 100 M capacity operation from stump to market. Pine or hardwood. Address

"F. 100," cart AMERICAN LUMBERMAN.

UP-TO-DATE BAND FILER WANTs POSITION

Single or double cut. Address

"F. 104," care AMERICAN LUMBERMAN.

WANTED—SITUATION AS MANAGER

Shipper, tally man or any other position by an all around lumberman.

Address "F. 114," care AMERICAN LUMBERMAN.

MAN WITH GENERAL OFFICE AND EXECUTIVE

Ability and large experience in lumber and millwork business desires position as manager or assistant manager. For several years was Pacific Coast buyer at Tacoma for eastern interests. Familiar with manufacturing and merchandizing methods, and accounting.

Address "F. 125," care AMERICAN LUMBERMAN.

YOUNG MARRIED MAN THOROUGHLY

Familiar with the manufacture and office of hardwoods and yellow pine wants a position in North. Am able to handle traffic work also. Best references.

Address "E. 113," care AMERICAN LUMBERMAN.

WANTED—POSITION BY AN

Experienced yellow pine lumber buyer familiar with long and short leaf mills of Mississippi, Louisiana and Alabama. A1 references. Address "F. 109," care AMERICAN LUMBERMAN.

WANTED—POSITION BY BAND SAW FILER

References furnished; locality not particular. Address LOCK BOX 42, Rainier, Wash.

FIRST CLASS CIRCULAR SAWYER WANTS

Position; have had experience in hard and soft wood. Can come at short notice.

Address "F. 128," care AMERICAN LUMBERMAN.

WANTED—POSITION WITH RETAIL LBR CO.

As manager or assistant. Five years' experience in one yard, steady and reliable. Desire permanent position with people who appreciate the stock being kept in nice shape. A1 reference. Address "F. 106," care AMERICAN LUMBERMAN.

WANTED—TO CHANGE POSITIONS AS

Store manager or assistant November 1st; southern location preferred. With present concern three years. References: Present employers and others. Successful store manager. Single. Address

"KENTUCKY," care AMERICAN LUMBERMAN.

WANTED—POSITION AS BAND SAWYER

Fourteen years' experience; right or left hand mill; satisfaction guaranteed; can come at once.

J. A. WHETSELL, Richlands, Va.

HARDWOOD FLOORING MILLMAN

Wants position. Experienced and up-to-date. Can build or put unsuccessful mill on paying basis. Make good where others fail. Salary based on improvements.

Address "F. 118," care AMERICAN LUMBERMAN.

ABLE, ENERGETIC, YOUNG MAN (33)

Wants position as manager retail yard, good live town or city, or auditor line yards. Over fourteen years' experience, thoroughly competent and A1 references.

"KANSAS CITY," care AMERICAN LUMBERMAN.

WANTED—POSITION AS GENERAL MANAGER

Or assistant with lumber manufacturing concern. Can organize new institution or put old unsuccessful one on paying basis. Northern hardwoods a specialty. Salary secondary until competency is proven. Age, 35. A1 references.

Address "E. 118," care AMERICAN LUMBERMAN.

EXPERT BOOKKEEPER OR OFFICE MANAGER

Wants position. Can take complete charge of all office work. A1 references. Pacific coast location preferred.

Address "E. 112," care AMERICAN LUMBERMAN.

THOUSANDS UPON THOUSANDS

Of people have obtained good positions by advertising in the Wanted Employment columns of the AMERICAN LUMBERMAN. Your ad inserted in this paper would be read by nearly everyone interested in the lumber world and its allied industries. Don't wait, send your advertisement at once to the AMERICAN LUMBERMAN, Manhattan Bldg., Chicago.

Containing Complete Reports of the Logging Congresses in the South and West.

COPYRIGHT, A. D. 1913, BY THE AMERICAN LUMBERMAN.

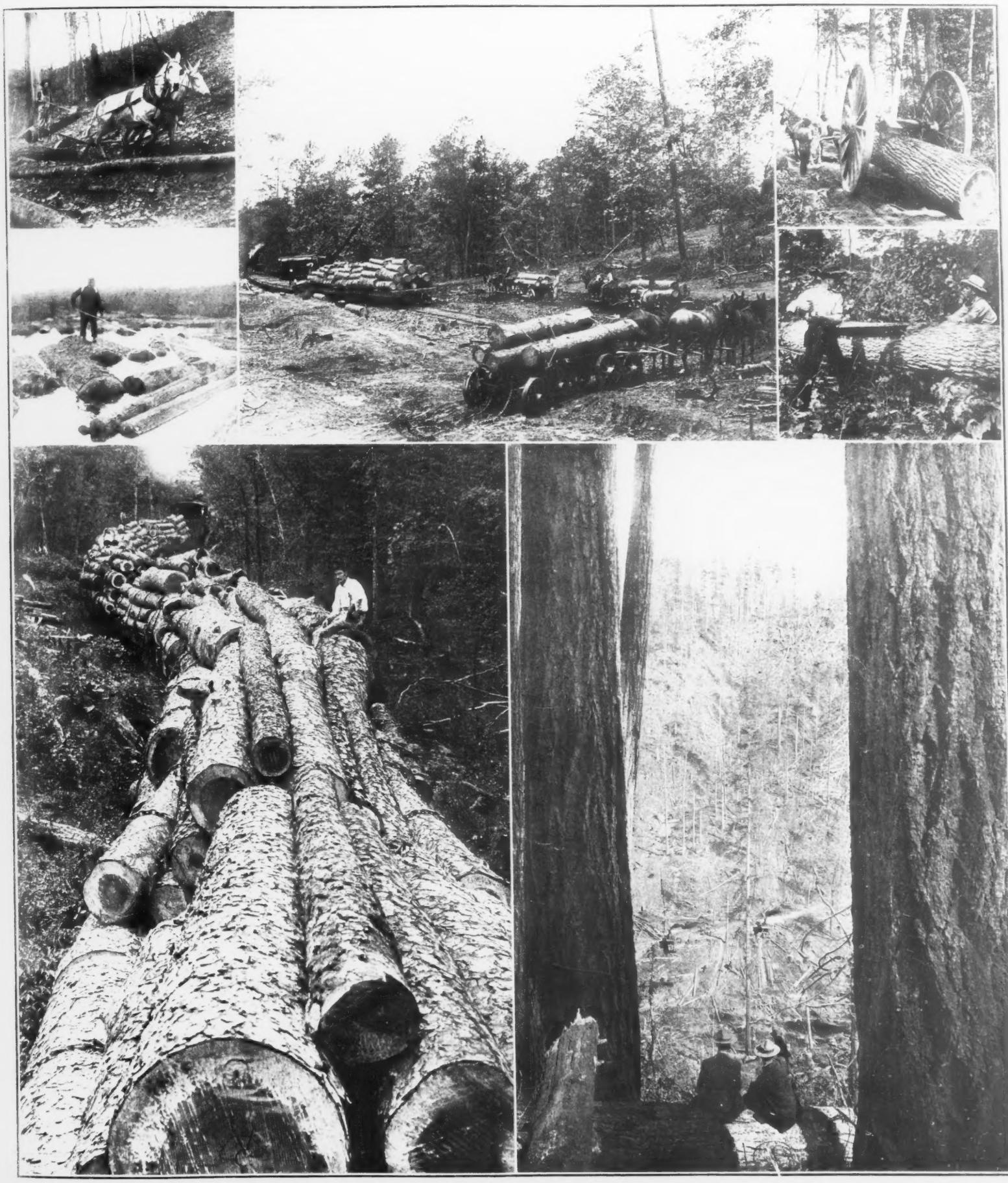
American Lumberman

NORTHWESTERN LUMBERMAN
ESTABLISHED 1873.

CONSOLIDATED
JAN. 1, 1899.

THE TIMBERMAN
ESTABLISHED 1886.

SUPPLEMENT TO OCTOBER 4, 1913 ISSUE.



IT IS THE LOGGER WHO FIRST TRANSFORMS POTENTIAL FOREST WEALTH INTO PRACTICAL VALUE.

ROEBLING WIRE ROPE

For Seventy Years Recognized as the Standard of the World

Logging under most favorable conditions is, as you will concede, very hard on rope. The best the rope gets at any time is the worst of it.

To obtain satisfactory results, for this hard service, you require not only ***great breaking strain,*** but ***extreme toughness,*** so that your rope will stand severe ***bending, twisting, jerking,*** and ***abrasion.***

The ***Roebling*** experience of ***seventy years*** in the manufacture of wire rope has enabled them to produce a rope that meets the ***Pacific Coast Logging conditions*** in a most ***satisfactory manner.***

Every logger in the Pacific Northwest knows the cost of rope is not based on the purchase price, but on the ***number*** of ***feet logged*** with each line.

Roebling Rope may show a greater first cost, but your ***final records*** will prove that it is the ***least expensive.***

Every user of ***Roebling Wire Rope*** will tell you that he has logged a ***greater number*** of ***feet*** at a ***less cost*** per thousand feet by using ***Roebling Rope.***

If you are willing to take the other fellow's word for it, ask any logger who has used ***Roebling Rope*** (your nearest neighbor) and your business is ours.

If you are from Missouri, let us demonstrate what we can do for you, and the result will be the same.

After we have proved to your satisfaction our ability to ***deliver the goods,*** we want your business.

We have the largest stock on the Coast.

You want the best—We have it.
Why not get it?

John A. Roebling's Sons Co.

COAST STORES:

SAN FRANCISCO, 624-646 Folsom St.
PORTLAND, 89 Fifth St.
LOS ANGELES, Cor. Market and Alameda Sts.
SEATTLE, 900 1st. Ave., So.

FACTORIES:

Trenton, N. J.
Roebling, N. J.

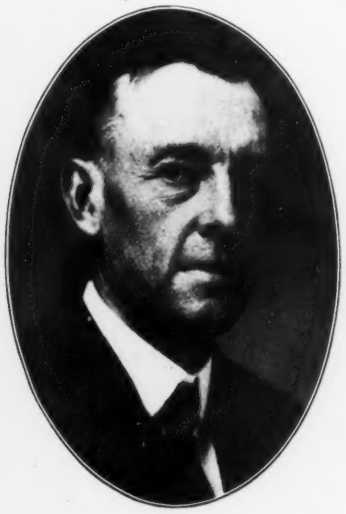
FIFTH PACIFIC LOGGING CONGRESS.

Conference Indicates Progress in Forest Engineering—Problems of Woods Work Treated Exhaustively—Addresses and Debates Show Marked Advances in Solving Loggers' Difficulties—Future Problems Outlined.

SPOKANE, WASH., Sept. 27.—If one had not attended the four previous congresses, one could not have dreamed that there is any branch of the lumber industry that could develop so much earnest study and attention to technical matters as has been shown by the addresses and discussions of the fifth annual Pacific Logging Congress, that closed its two days' deliberations here with the junket to the Potlatch Lumber Company's operations, ending with the return to Spokane tonight of the special train of eight Pullman cars and observation car, on which the trip was made.

More and more are these anuual gatherings resulting in technical and scientific presentations of the practical progress being made from year to year in the logging industry. Not only the technical but the human side is also coming in for consideration by these practical men who are supposed to gage everything they do in a business way by the query, "Will it pay?" Strange as it may seem, they find the answer is that it does pay from the standpoint of dollars and cents as well as from that broader standpoint of humanity.

Better methods of logging and better workmen both tend toward economy of operation and the two days' deliberations brought out many excellent thoughts and showed the results of the progress made in logging engineering during the last year. At the outset, great stress was laid upon the necessity of having many papers presented by practical men familiar with the topics assigned to them that there might be



E. P. BLAKE, OF SEATTLE, WASH.:
Retiring President.

created some literature dealing with the logging industry. This need has now been met and, as at previous congresses, the only criticism that could be made of any moment was that the presenting of papers—and most excellent ones they were—took up all the time, and more, too, as it was not possible to find the time to present some of them, and there was practically no time left for discussions. It is likely that another year will find the plan of the congress changed a little more along the lines of engineering societies, where there are but few papers and much discussion. This but indicates the evolution of the congress along practical lines.

Commendable Features.

A commendable feature that was lacking this year was the exposition of mechanical and engineering devices and supplies that was tried at last year's congress at Tacoma and was a marked success, though because being located in the same hall as the congress it resulted in noise that disturbed the deliberations and also kept some people from the sessions. It is likely that if the exhibits are again made a feature of the congress, as seems probable, they will be housed far enough away as to not interfere with the congress, and be closed during the business sessions. That there was marked interest manifest in the deliberations of the congress was evidenced by the fact that over 300 men sat for hours listening to the addresses with scarcely one leaving the hall of the congress at any time.

Much credit is due George M. Cornwall, of Portland, Ore., the secretary and founder of the congress, for the success that it has become. That it is appreciated is indicated by the many words of commendation heard on all sides. The retiring, at his own wish, of E. P. Blake, of Seattle, as president marks the passing of an efficient official and a pleasing presiding officer and the choosing of J. J. Donovan, vice president of the Bloedel Donovan Lumber Mills, Bellingham, Wash., as president, indicates that the congress will continue to have at its head an able executive, one who is not only practical but a trained engineer as well.

Excellent progress was made the last year along the line of securing training in western State educational institutions of learning that will tend to fit young men for the vocation of a logger, and during the coming year this movement, which originated from a suggestion of M. H. Dickinson, of Seattle, western manager of the Lidgerwood Manufacturing Company, pioneer producer of overhead logging systems, made in the columns of the AMERICAN LUMBERMAN several years ago, and which was taken up by the Pacific Logging Congress with commendable foresight and pushed to what now seems to be a successful conclusion. Although several western universities are now offering courses in logging engineering, they are not yet as they should be, and as will be observed by a perusal of the proceedings in the pages following, especially of the able presentation of the matter by James O'Hearne, and the discussions bv Dr. C. A. Schenck, and representatives of most of the western State universities, there is still a great difference of opinion as to how the logging engineering training shall be carried out. But progress has been made and that is a great deal.

Welfare Work Considered.

That the welfare of the men who work with their hands—the rough and ready lumberjacks—is being considered, no matter what the motive, shows advancement along humanitarian lines as well as a desire to bring about greater efficiency by developing a higher class of workmen. A number of the larger operators have introduced with success profit sharing with their employees, and others have established welfare clubs at their camps, under Young Men's Christian Association auspices, and are pleased with the result. This feature of the congress received much consideration both through addresses and discussions on profit sharing, and the address of an eminent physician treating of the physical care of the logger, and the welfare dinner under Young Men's Christian Association auspices at which the moral needs of the lumberjack were brought to mind.

The trip to the operations of the Potlatch Lumber Company fortunately afforded an opportunity to witness the progress that has been made in utilizing mill waste in generating electricity and the transmission of this electrical power several miles to the forest, where it operated donkey engines engaged in logging. As much value as almost everything else is the mixing up of between three and four hundred practical men engaged in the same occupation and the exchanging helpful ideas. This is not the least of the benefits that the logging congress brings to those who attend.

This year's congress was staged among ideal settings. It was held in the big pavilion in Spokane's most beautiful park, with tall pine trees casting their shadows across the doorway, through which came the fragrance of beautiful flowers, and at noon the lunch was spread on long tables beneath the trees in the open, and it consisted of the fare the logger likes.

OPENING SESSION.

The fifth annual Pacific Logging Congress was auspiciously opened Wednesday evening at 8 o'clock in the Moorish room of the Hotel Spokane. It had previously been arranged that in the absence of President E. P. Blake, of Seattle, the meeting would be presided over by the eloquent representative of a race of orators, J. J. Donovan, of the Bloedel-Donovan Lumber Mills, Bellingham, Wash., whose name betrays his nationality, his politics and his religion. The meeting was an informal one for the transaction of some routine business and the reading of the reports of the officers of the association.

From the start it was seen that the Scotch were not to be overlooked in this congress and H. M. Strathern, of Post Falls, Idaho, made an address of welcome to those who attended the early congresses and who were present for the opening meeting. Mr. Strathern, as one of the active members of the local entertainment committee, in his characteristic way, for which he has a reputation all over the Pacific coast, impressed it on all of the visitors that they were very much welcome and that Spokane was going to leave nothing undone to make their stay as pleasant as possible.

Secretary George M. Cornwall read a telegram from President Blake expressing his regret at not being able to attend and hoping that the fifth annual session would be the most successful congress yet held. Mr. Cornwall then read President Blake's address:

PRESIDENT'S ADDRESS.

By E. P. Blake, of Seattle, Wash., Who Gave a Comprehensive Review of the Year's Work.

Beyond extending to you my personal greetings, and assurances of the gratification it is to be again privileged to meet you all once more under such favorable circumstances, well calculated to further the cause that is dear to us all, there appears to be nothing I can say which will be pleasurable, interesting, or profitable to this gathering.

I can not refrain, however, from congratulating you upon your good fortune in having the stage settings for this convention so delightfully complete, indicating, as they do your hosts' full appreciation, that they have fully grasped the significance of these yearly gatherings; and further, they have shown by the care, skill and completeness of the details of the preparation to fittingly receive you that they, at least, do not conceive these annual convocations to be "just for fun." Further, I want to say every detail of this charming reception is a delicate compliment to every guest present, and your hosts are entitled to expect tangible results from you. And it is time that tangible results were had, gentlemen. I might say further it will be a grievous regret to your chairman should it chance that this congress shall adjourn without having produced expected results, or, at least gone on record as pledged to produce them.

It is not necessary again to define the attitude of this organization or reiterate the purpose for which it was created. You all know now that it has, and always has had, a definite, clearly defined object to attain, and I believe the time is ripe for this body to put itself on record in an unmistakable manner.

As a concrete body this organization, up to this date, has

J. J. DONOVAN, OF BELLINGHAM, WASH.:
Newly Elected President.

done little beyond lending its moral support to a purpose that has awakened widespread intelligent interest.

If this purpose is worthy of an annual expression of opinion, it is worthy of something more, and the "something more" will never come from any initiative that does not originate right here; in other words, with us. What are you going to do about it? We have talked all round this question for the last four years, and beyond "leave to print" have not gotten further into the record. A lot of time, a lot of money has been spent to get as far as we have, and if the idea has been worth its cost to date the purpose is worth far more. Further than this, if we hope to realize upon the investment to date, something must be done to start the purpose definitely on its way to ultimate fruition. The seed has been planted. Now the soil must be fructified.

All of the States on the western fringe of this great country are new, having a comparatively sparse population, and laboring under the customary burdens of early development. Their colleges are new, are not heavily endowed nor likely to be in the near future. Their sources of revenue for maintenance are more or less of political origin, and difficulty has been encountered when the financial phases were reached in the effort to inject into the curriculum a course covering a new science. A spirit of friendly coöperation has been met, but—and we may as well come to the point—adequate financial provision for maintaining this new course seems to be far from certain.

Our colleges are equipped and financed to handle the accepted sciences. Comes something new, and, although of recognized merit among the educators, it has not, as yet, awakened a demand from the political public. While I agree with the contention that it should be handled by State and national aid, and undoubtedly will be, in time, still if you want the benefits quickly, if you want them during your and my participation in the lumbering game, it seems certain that you will have to demonstrate that an emergency exists, and to do this seems to open up one avenue and that is temporarily to finance the course in one or more colleges selected for the experiment and until such time as the State legislatures shall come to realize that one of the greatest assets of any commonwealth lies in the trained minds of young men capable of developing the great industries upon which their wealth and progress are dependent.

We need those trained minds now. The State needs them

now, and would have them if the public at large only knew, but until that time comes it looks as if the only way in which we can get them now is through individual effort.

Some day popular clamor will demand just such young men as we now think the public needs, and, if this congress has the courage of its convictions upon this point, it will not adjourn until definite steps have been taken to endow at least one chair devoted to the science of forest engineering.

A great deal of valuable time, a great deal of thought, and an incalculable amount of energy have been devoted to this project during the last four years by men whose very earnestness bespoke the unselfishness of big minds engaged in big things. The project, the cause, is worthy of this effort not alone for its own intrinsic merit, not because of your present crying need for it (and you never needed it more), not because it would be a direct benefit to your business and my business, not because it is a helpless infant for which you each and all stood as godfather at its birth—not because of any of these things, any one of which, however, is ample justification, but because first, of the force, energy and life-devotion which the man who conceived it has dedicated to it, and second, because you owe some return to the State and Nation that have protected you in the use of opportunities that have brought to you the comforts and enjoyments of life and in many instances wealth, position and the ability to do big meritorious things.

This latter obligation may, I am aware, be open to some argument, but there can be no argument as against the obligation you owe to George M. Cornwall for the tireless, disinterested, never-ceasing efforts he has put forth to advantage-your personal interests, and to discover to you new methods and ways for advancing a great, profitable industry; and the great cause which he has fathered, without self-thought, that of creating opportunity, and all that goes with opportunity for your son, and my son, in a cause that must win, and you must make it win.

You will be recreant to good faith if you fail in this, and so I say and I earnestly plead with you not to permit this congress to adjourn without its having first gone on record as having taken some step, or having pledged itself to take the requisite and necessary steps, to make sure the establishment of, at least one chair devoted to the science of forest engineering, in some college within the borders of this great western Empire in which we are privileged to enjoy far more advantages than the average of mankind.

I thank you for your indulgence, gentlemen, and now declare the fifth session of the Pacific Logging Congress formally opened.

Mr. Donovan took the occasion to call attention to the good work that has been done by Mr. Blake in making the logging congresses successful, in educating the loggers and creating a fraternal feeling among them, thus facilitating the exchange of ideas and making it possible for one to profit by the mistakes of another.

The secretary then read the address of H. C. Clair, vice president of the congress. It follows:

VICE PRESIDENT'S ADDRESS.

H. C. Clair, of Portland, Ore., Commends Work of Congress and Points Out Needs.

During the past few years that this logging congress has been in existence many subjects have been ably handled and matters of great interest will be discussed by gentlemen who are well versed in their respective lines. Your time will be better occupied than in listening to any address your vice president might make and I will not burden you with anything more than a few words of kindly greeting. In my native State of Oregon statistics show that of the entire number of people engaged in all the manufacturing in the State over 52 percent are workers in the lumber business. About the same percentages apply in Washington and Idaho and you are the captains who command the great army of men who produce the raw material in the log.

Could you double your crews in the woods at once and keep them at work continuously, such prosperity would spring up on the Pacific coast as has never been known before. Should you withdraw all your men from the woods for six months such a business depression would result as to ruin a large percentage of the business houses of the Coast. I merely speak of these things to draw your attention to the size of the industry, almost all of which has sprung up during the last fifteen years.

Development has been very rapid and improved methods have been forced upon you so fast that it has been almost beyond the ability of men not favored with wonderful mechanical genius to comprehend and utilize the new methods that have been thrust upon them. The advantages of gathering once a year to talk over with one another the various phases of your business and perhaps get straightened out on some trouble that has caused you many sleepless nights is of great value.

The old adage that "all work and no play makes Jack a dull boy" applies just as much to a lumberjack as to any one and it is certainly a good thing to get out of the woods once in a while and enjoy the entertainment such as we are sure is in store for us on these occasions. I am sure you will all have a good time during every minute of your stay in this beautiful city of Spokane with its good people all so ready to entertain you.

The Secretary's Report.

Secretary George M. Cornwall, of Portland, Ore., gave a lengthy resumé of the work of the last year, telling of the scope covered by the Pacific Logging Congress and characterizing it as an international body. To show that its workings are of interest to loggers outside of the United States and Dominion of Canada he read a number of letters from widely separated points in the Old World asking for a detailed report of last year's meeting. Mr. Cornwall's report follows:

SECRETARY'S REPORT.

By George M. Cornwall, of Portland, Ore.—Work of Year Well Covered.

The fifth session of the Pacific Logging Congress meets in "Sunny Old Spokane," at the cordial invitation of the great Inland Empire, comprising Montana, Idaho, eastern Washington, eastern Oregon and eastern British Columbia. Here is a territory which will produce this year in excess of a billion feet of lumber. It is in the great western white pine, Idaho white pine and larch producing district of the West. The Forest Service figures show the following total standing timber in the timbered states of the West:

Montana	65,600,000,000
Idaho	129,100,000,000
Washington	391,000,000,000
Oregon	545,800,000,000
British Columbia (about)	300,000,000,000
California	381,400,000,000

The Pacific Logging Congress is an international body. Among its heartiest and warmest supporters have been those of our British Columbia friends just across the imaginary line—which each year becomes dimmer as we get better acquainted. We are all one big happy family of lumbermen and loggers, creatures of the forest, inspired with the same instincts and troubled with the same cares.

The underlying motive of the congress is co-operation. It exists because it strives to help. Its sphere of influence is already, in four short years, worldwide. In every country in the world where lumbering is carried forward it has shed its rays of helpfulness. Its reports are textbooks for the mighty logging industry of the world. I will just read you a few extracts from letters which have been received to show how the congress is appreciated in foreign lands.

HOLLAND.

The Hague, May 2, 1913.

George M. Cornwall, Secretary Pacific Logging Congress: I should be very glad to have you send me a copy of the Pacific Logging Congress report for 1912. H. DOYER.

AUSTRALIA.

Melbourne, July 3, 1912

George M. Cornwall, Secretary Pacific Logging Congress: We are pleased to acknowledge receipt of the 1912 Pacific Logging Congress report. This is particularly valuable to us and we appreciate it. Can you post us two more copies of the report, as our friends in Tasmania have logging difficulties to overcome and find your journal of much assistance? MILLARS TIMBER & TRADING CO. (LTD.),

Brisbane, June 25, 1913.

George M. Cornwall, Secretary Pacific Logging Congress: We have received copy of the 1912 Pacific Logging Congress edition, and find some very interesting information. We shall be pleased if you will kindly post us two copies of the 1913 session as soon as these are available.

LAHEYS LIMITED.

JAVA.

Semarang, June 28, 1913.

George M. Cornwall, Secretary Pacific Logging Congress: You would oblige us very much if you would send us a copy of the Pacific Logging Congress edition of the first, second, third and fourth sessions, as these papers contain many valuable data which are very useful to us in our endeavor to log the forests of these lands.

NED.-IND. HOUTAANKAP MATTSCHAPPI.

Growth of Workman's Compensation Idea.

The Pacific Logging Congress has lent its influence and support to the principles of workman's compensation in the various States and Provinces it represents. The idea is gaining ground steadily. Bismarck, the great German soldier and statesman, the real father of the compensation idea, stated the cause of compensation probably more succinctly than any one else, when he said: "Far be it below the dignity of any German military or industrial general to fight with a private in the ranks, fallen as the result of an engagement in which he bravely did his part."

No personal profit directly or indirectly should result from the injuries of the worker. To capitalize the misfortunes and suffering of the laborer is indefensible from any standpoint.

H. C. CLAIR, OF PORTLAND, ORE.;
Retiring Vice President.

The operation of the Washington compensation act has blazed the trail for other States to follow. The law is compulsory. Its benefits have been widespread. The report for the first twenty-one months' operation of the law shows that the commission has collected $2,105,798.19 and paid out $1,112,328.10. This service was carried forward at an expense of 8.5 percent.

California.

The last session of the California Legislature passed an elective workman's compensation bill.

Oregon.

The State of Oregon enacted a workman's compensation act which is elective in form. It differs in some minor respects from the Washington law insofar that it embraces the triple contribution to the fund by employer, employee and the State, and provides for a first aid. The awards under the Oregon act are higher than those of Washington by 30 percent. The application of the law was held up by referendum. A vote will be taken at a special election to be held in November, and it is confidently expected the law will be sustained.

Idaho.

In the Idaho legislature a bill similar to the Washington act was introduced. It passed the house practically unanimously. It failed in the senate by one vote. The power of the casualty insurance companies was exercised successfully against the proposed law. The governor of the State has appointed a commission to draft a bill for submission to the incoming legislature.

Montana.

The legislative halls of Montana at the last session fairly resounded with compensation bills. The employers, employees and casualty companies were each represented by various forms of legislation. As a result, no workman's compensation legislation was enacted. But the seed has been sown: the golden harvest will come later. The principles of automatic workman's compensation will never die.

British Columbia.

The Province of British Columbia appointed a committee on labor to study the whole subject of workman's compensation. A report will be made to the forthcoming legislature. It is very probable that the Washington compensation law will be offered for adoption with some slight modifications.

I am sure the members and friends of the Pacific Logging Congress who were present at the Portland session in 1910 must feel gratified at the achievements which have been accomplished in securing remedial and, wholesome legislation along these lines. The Congress started out with the idea that uniform legislation on the subject of workman's compensation should be the final goal of accomplishment in the various lumber producing sections in the West. We are making progress, and in a few years it is hoped this attainment may be possible, as the interests are identical.

Logging Engineering Courses.

Committees were appointed at the Tacoma session to take up with the higher institutions of learning in the various States the question of ascertaining what could be done toward securing the proper recognition for logging engineering courses. The chairmen of the various committees will make their reports.

In this connection it may be of passing interest to note that a bill was introduced in the Oregon legislature asking for an appropriation of $65,000 for the purpose of erecting a forestry building at the Oregon Agricultural College. The friends of the measure found that owing to the very heavy financial demands on the State treasury the bill would not pass, hence it was withdrawn. The sentiment, however, that was made will help forward the idea at the next session of the legislature. The subject of logging engineering courses was new; mining and agricultural courses were accomplished facts. The value to these industries of technical training is undisputed. Logging is an engineering problem. It requires the trained mind to successfully cope with the mammoth undertakings. This idea is gaining ground. No other industry of the stupendous magnitude of the lumber business of the West would hesitate to prepare and train men especially adapted for the business. The logging engineer is as distinct in his special sphere as the electrical, hydraulic or railroad engineer in his particular vocation. The Logging Congress is simply trying to standardize the profession of logging engineering. It is not creating a profession; the logging engineer has been with us since the first tree was felled and transported to the scene of its ultimate use.

The Congress will take up and discuss the subject of "How to Teach Logging Engineering," and formulate some plan—perhaps only tentatively—for carrying it into execution. James O'Hearne, the logging engineer for the English Lumber Company, of Mt. Vernon, Wash., will present the subject. It is to be hoped the resultant discussion will help crystallize the ideas and weld them into a practical and workable plan. Representatives of the various educational institutions have been invited to take an active part in the discussion of this problem.

Cable Tramway.

The steadily increasing difficulties surrounding the removal of timber have brought into use the cable tramway as a ready and effective means for the transportation of logs. In Europe the evolution of the cable tramway has reached a wonderful stage of development. In this country the Potlatch Lumber Company has successfully adopted a cable tramway for the removal of timber, operating for a distance of nearly 2 miles. Both of these systems will be presented for your edification.

Sky Lines and Cableways.

The operation of various systems of sky lines and cableways will be presented by various speakers. The idea is steadily gaining ground that wherever practicable surface yarding should be avoided, or at least minimized. The plowing up of furrows by means of a powerful logging engine, dragging an object with a square end, can not be regarded as either the ideal in transportation methods or the most economic use of available power. Ground yarding has its undoubted place in the economics of logging, but an evolution in thought among our most modern loggers inclines steadily to the attempt to minimize friction by suspending the load wherever practicable.

Electric and Steam Sky Lines.

The use of sky lines operating for distances up to 4,000 feet, and yarding 100 feet on either side of the main line, has been successfully demonstrated in the Inland Empire. You will have an opportunity of witnessing the operation of these systems. The use of a sky line adaptable to yarding by supporting the main line is an evolution. Just how far this system can be extended remains to be seen.

Electricity in Logging Operations.

The congress will have the benefit of the development of logging practice since the last congress. There is a broad field for the utilization of electricity in logging operations. Commercial power lines will find the field of logging an available outlet for power. From the fact that the service requires a day current it readily follows that power companies are able to supply current without interfering with lighting operations. The elimination of the fire hazard, fuel and boiler maintenance, immediate availability, are strong and convincing factors in favor of electric power in logging operations.

Gasoline Logging Engine.

At the Vancouver session of the congress a model of a gasoline logging engine was exhibited, which created considerable interest. You will hear the results that have been attained from the use of the gasoline logging engine, which undoubtedly has a place in logging operations, under conditions suited to its service.

Equipping Cars with Automatic Stakes.

The interstate railroads as well as many private logging companies are equipping their logging cars with automatic car stakes and bunks. Not only is this an economical feature but it removes the hazard incidental to chopping stakes. It is likely that the measure will be made compulsory through legislation, if not voluntarily adopted.

Fuel Oil.

The adoption of fuel oil in locomotive and logging engine service is steadily growing as its value becomes appreciated. Not only directly on the saving of fuel costs, but in the reduction of the fire hazard, the use of oil for fuel is entitled to the earnest consideration of loggers. The difficulties to be encountered in the successful burning of fuel oil have been practically overcome. The builders of logging engines have also conformed to the conditions surrounding the burning of fuel oil by adapting their stack construction to allow for a freer opportunity for the combustion of the gases.

Addresses to Students in Forestry Classes.

The members of the committees appointed by the congress to present the subject of logging engineering to the students in the forestry classes in the various States met with much encouragement in the University of Washington, at Seattle, and at the Oregon Agricultural College at Corvallis. The young men were deeply interested. It is to be honed that similar committees will be appointed at this session and a continuance of this missionary effort to "teach the young idea how to shoot" be encouraged.

Logging Engineering Courses Indorsed.

In California the legislature made an appropriation for the forestry branch of the State university.

In Montana a forward movement in recognizing the value of forestry was assured by the legislature, through the medium of the Montana University.

The courses in practical forestry and logging engineering at the University of Washington have been strengthened. This is the pioneer effort in the West and has resulted in some very creditable work.

In Idaho the subject of forestry and its importance to the State and the training of young men for this profession received the attention of the legislature. The University of Idaho through its forestry branch has undertaken to arouse interest in the entire subject of lumbering. A report as to progress in this direction will be made at this congress.

In British Columbia the teaching of logging engineering courses in the new university to be erected at Point Grey, near Vancouver, has been brought to the attention of the premier and ministers and the educational forces in the Province. The lumbermen have taken a very active interest in the subject. Resolutions favoring courses in logging engineering were adopted by the British Columbia Lumber Manufacturers' Association and Canadian Forestry Association at the meeting at Victoria.

Standardization of Logging Tools.

The chairman of the committee on the standardization of logging tools, W. W. Peed, logging engineer for the Hammond Lumber Company, Eureka, Cal., will make this report. This is a subject of deep and practical importance and we feel sure the subject will receive the attention it deserves.

Hillside Logging.

The congress will have presented for its edification by H. W. Sessoms, logging engineer for the Ebey Logging Company, Arlington, Wash., his new hillside logging system. As nature grew the bulk of the timber on the hillsides and other inaccessible locations, any plan looking to its removal at a minimum cost will be welcomed. Mr. Sessoms is a very practical operator and his views will be received with much interest.

Bucking Logs.

Despite the advancement which has been made in the transportation of logs, from the point of greater efficiency in equipment, there has been no forward step taking in reducing the manual effort necessary to buck or fall timber. A light portable rig, operated by compressed air, gasoline or electric power, which will meet the varying conditions to be encountered in the falling and bucking of timber, more especially in the heavy coast districts, would be speedily adopted. The C. A. Smith Lumber & Manufacturing Company, of Marshfield, Ore., has made some experiments with an electrically driven saw. It is to be hoped before this congress closes that some movement looking to the attainment of some plan for systematically reducing bucking costs may be set in motion. An address on a tree controller system to be used in connection with the falling of timber will be one of the features of this session.

Small Foundry in the Camp.

The attendant loss of time and inconveniences to which the logging operator is often subjected by reason of delays in receiving necessary castings, following the emergency of wrecks and unavoidable break-downs, has forced into prominence the value of the small foundry, capable of making gray metal castings. The Vaughn & McDonald Logging Company, of Marshfield, Ore., and the Ebey Logging Company, of Arlington, Wash., are successfully employing small foundries as part of their regular camp equipment. Some camps have for several years made their own brass castings, and in one instance a cylinder of a logging locomotive was cast of brass in an emergency.

The average logging camp with its steadily increasing size and permanency is able to surround its engineering force with appliances for making repairs that would not have been possible a few years ago. In every instance of course the location of the camp and its proximity to ample facilities for making repairs quickly must be kept in mind in advocating the adoption of small foundries. In this connection may be noted the growing tendency toward the better equipment of machine shops and round houses. Car building, in addition to repair work, is being successfully carried forward in several large camps. Provide the logging engineer with a good machine shop, with plenty of light, and modern tools adapted for the requirements, manned by a capable machine shop foreman, and the elimination of lost time incidental to break-downs, and the higher efficiency of the camp will be surprising. The loss of the use of a locomotive for a day or even a few hours entails not only the derangement of the orderly operation of the camp, but breaks down the logical sequence of results, which are absolutely essential to the successful conduct of a logging operation.

The Absent Members.

Since the last congress, two active members have passed over the "Great Divide," Gus A. Izett, of the Izett Lumber Company, Brinnon, Wash., and William Deary, late manager of the Potlatch Lumber Company. Mr. Deary was the Idaho executive member for three years. He was one of the stalwart supporters of the congress, and at his invitation, extended one year ago, we journey to Potlatch to view the work of his creative genius. A committee will doubtless be appointed to draft suitable resolutions attesting the high esteem in which the two members who are not with us this year are held.

Better Care of the Men.

Probably the highest compliment ever paid the efforts of the congress looking to the betterment of the conditions surrounding the camp life of the men was the significant statement made by E. J. Palmer, manager Victoria Lumber & Manufacturing Company, Chemainus, B. C. In speaking of some contemplated improvements in connection with his new modern camp, he said: "I do not know that the bathing facilities, laundry and other conveniences we are going to install will be appreciated to the extent that the Pacific Logging Congress thinks they will be, but as a firm believer in the objects of the congress, in helping raise the standard of intelligence in logging methods, as well as helping to make life a little more comfortable and agreeable for the boys, I am going to put in the new-fangled ideas and trust to results." The congress has always steadfastly advocated the very close relationship of the human factor in the success or failure of logging operations, as well as in other industrial enterprises. It pays—and not alone in dollars and cents—to care for the physical and mental welfare of the men who perform the arduous labor in connection with the mighty logging industry.

The transformation that has taken place in the camp life during the last five years has been marvelous. Electrically lighted camps, with suitable provision for bathing facilities, barber shop, pool, reading and recreation rooms are now not uncommon.

Young Men's Christian Association.

The Y. M. C. A. as a factor in this uplift movement has contributed its full share, and deserves the heartiest consideration. Around the Welfare Dinner table reports will be made by operators of the active results accomplished through the instrumentality of the Y. M. C. A. industrial branches.

The Blanket Squad.

The necessity for the carrying of blankets should be obviated as quickly as possible. It is a relic of early pioneer days. In the older lumbering States the toting of blankets has long since been discontinued. The blankets are a very effective means of spreading disease and vermin.

Bunk House Service.

The suggestion was made at the last session of the congress that a bunkhouse service of, say $1 a month would be cheerfully paid by the men, the money to be used for laundry, bathhouse and bunkhouse service. Casual investigation has disclosed a willingness on the part of the men to cooperate in this movement. The benefits to be obtained from such a small expenditure should show a very high percentage of results, both in the physical comfort of the men and the general feeling of respect which pervades every human being after a refreshing bath. Cleanliness is next to godliness, and this maxim applies with as much force to the man in the woods as the boss in his home.

Loggers' Fire Box.

The congress has secured Dr. J. Chris O'Day, one of the foremost physicians of Portland, to deliver a paper on feeding and caring for the men, and we feel sure that his trenchant style and clear-cut ideas embodying sanitation will be appreciated.

Hopes of the Congress.

The purpose of the Pacific Logging Congress is the advancement of the science of logging engineering. How best to accomplish this purpose is its aim. I believe that the lumber and logging interests of Montana, Idaho, Washington, Oregon, California and British Columbia should each raise an endowment fund of at least $100,000, the interest derived from this fund to be used in part payment of the salary of the man who is to direct the course in logging engineering in each of these States and Provinces.

If courses in logging engineering are to become a success and command the respect of the lumber industry in the various sections of the West, men of undoubted ability and sincerity of purpose should be chosen as the directing heads. To secure such men—and they can be found today filling responsible positions in the modern camps—they must necessarily be paid handsome salaries to attract them. Seven thousand five hundred to $10,000 a year is a salary none too large to pay for the services of these men. The institutions of learning with which they would be affiliated are not in a position to pay salaries adequate to secure the services of high-grade instructors in logging engineering. The lumber industry should come into the breach and for its own benefit—laying aside any question of sentiment—insure a plan whereby bright young men may be educated and trained in logging engineering. The investment will pay, not only in dollars and cents, but from that larger, broader and better viewpoint which enables men to look out upon the future possibilities of their industry and ennoble it through the higher intellectuality and skill of the men who direct and govern its affairs.

No higher honor could come to any man in the lumber industry than to feel he had been instrumental in helping standardize the profession of logging through the endowment of a chair of logging engineering. Big men in all industries have contributed to the perpetuation and upbuilding of some particular object in life—Carnegie, the iron master, with his libraries; Rockefeller, the oil magnate, with a university; Hill, the Empire builder, with bequests to colleges. The lumber industry has endowed a chair in Yale University. This is an excellent start. But the big, broad West has conditions and problems to solve in the removal of its crop of timber that are peculiar to itself. It comprises an Empire of its own. Its problems can only be solved by men who know them. The Pacific Logging Congress recognizes the two distinct divisions: Forestry and Logging Engineering. There is a place for both. We who are here today are more vitally interested in the logging engineering branch.

By way of digression and suggestion it may be found in the final analysis and study of this problem of how to secure proper courses in logging engineering, that the lumber and logging interests of the West should combine their efforts and centralize on some one State as a beginning, where adequate provision for teaching the mechanical courses may be provided. In other words, our young men whose education should be based solely on self-help would not be deprived of the benefits of a course in logging engineering by reason of inability to secure an academic course. Perhaps a school after the plan of the Boston School of Tech-

T. P. JONES, Superintendent of Logging, Potlatch Lumber Company.

A. W. LAIRD, General Manager, Potlatch Lumber Company.

nology will have to be provided. But these are only suggestions for your consideration. The teaching of logging engineering must not be sidetracked for lack of proper conditions. Neither must it be handicapped for lack of funds to secure the best available talent. Neither must its sphere of usefulness be crippled by attempting at the beginning to make it fit into a square instead of a round hole. A false or makeshift start would take years to overcome the prejudice which it would arouse. In the language of Davy Crockett, "Be sure you're right, then go ahead."

Kindred Organizations.

The Southern Logging Superintendents' Association, of which James Boyd, of the *Lumber Trade Journal*, of New Orleans, is the able secretary, is formed along similar lines to those of the Pacific Logging Congress, and is doing excellent work in the southern field. We hope at some future session to have delegates from our southern neighbor meet with us.

A Purse to Inventors.

Nothing stimulates inventive genius like a hope of reward. It is submitted for your consideration the idea of the congress that the offering of a prize for the solution of various problems might prove a ready means of securing results.

Conclusion.

During the last year interest in the Pacific Logging Congress has been kept alive through correspondence and personal visits of the secretary, and through the generous space accorded by the trade and public press for articles calculated to advance the cause of logging engineering. We are all proud of the Pacific Logging Congress. Its achievements, however modest, have been with an eye single to the uplift of the logging industry. It has made a place for itself; you have created it; it is yours. Let us unitedly go forward extending a helping hand wherever possible, realizing that like the "quality of mercy," it is "twice blessed; it blesses him that gives and him that takes."

In this connection, the thanks of the congress are due each contributor to the program, for the able preparation of the various subjects—which, in many instances, involved considerable outlay of time and labor.

Treasurer's Report.

The treasurer's report, read by Assistant Secretary-Treasurer David Davis, of Portland, showed a total of $3,948.29 received during the year ended September 15, 1913, and with a total cash expended during the year of $3,085.15 this left a balance on September 15 of $863.14.

The preliminary work of the Congress thus being disposed of, the opening session adjourned and the officers of the Congress were in a position to begin the morning session of the following day with the consideration of the interesting program of addresses that had been arranged.

THURSDAY MORNING SESSION.

The Thursday morning session was called to order in the large dance pavilion at Natatorium Park at 10:15 by Vice President H. C. Clair, who announced with many expressions of regret that President E. P. Blake was unable to attend. Mr. Clair then introduced J. J. Donovan, of Bellingham, who presided.

Mr. Donovan said he was the victim of a dire conspiracy between Messrs. Clair, Cornwall and Blake. He had received two wires asking him to come to the congress early and "tend hook" temporarily and they had then forced him to act as presiding officer. He was overjoyed when the daily press in reporting the opening session Wednesday night spoke of him as Mr. Blake and he had hoped to be able to keep up the disguise, but Mr. Clair had now spoiled that by introducing him.

Before proceeding with the regular program Mr. Clair announced that the Pacific Loggers' Association would hold a meeting at Davenport's cafe immediately after the Y. M. C. A. "welfare dinner."

On account of the modesty of T. P. Jones, Potlatch, Idaho, who had the first paper ("Experience with a Cable Tramroad") on the program, his paper was read by the secretary:

EXPERIENCE WITH A CABLE TRAMROD.

By T. P. Jones, of Potlatch, Idaho—Presentation of Results Obtained By Potlatch Company.

There is nothing new under the sun. When you come to figure it out, all mechanical principles have been exploited. It is simply a question of applying old principles to certain definite conditions.

I have been asked to give very briefly the results which have been obtained by the Potlatch Lumber Company in the operation of an endless cable tramway which it has been my good, or bad, fortune—you can take it any way you like—to have had something to do with.

In the first place, the location of the cableway is in a section of the country where a railroad could not have been built. The reason why the location was selected for an experiment, was by reason of availability and readiness to get in material. In the matter of experiments we made many—still at it—but we are making some headway. It was practically an unchartered sea we started out to sail upon. True, the cableway principle had been applied successfully in mining. But its application to logging was new in the United States as far as could be ascertained. Hence the only think to do was to try it out.

In this connection, I want to pay a tribute to the support and encouragement of that master-logger, who has gone to his reward, my friend, William Deary, manager for twelve years of the Potlatch Lumber Company, and with whom it was my good fortune to have been intimately associated for many years previously. Mr. Deary was a born logger. I have never known a better one.

Character of the Country.

The holdings of the Potlatch Lumber Company cover a large area. The natural contour of the country is broken and precipitous. Elevations of 2,000 feet are not uncommon. The timber will run on an average of 20,000 feet per acre. We log it clean down to 6-inch tops. It consists of Idaho white pine, western white pine, larch, spruce, white fir, Douglas fir and cedar.

The snow is heavy, attaining depths of 3½ to 15 feet. It begins to snow sometimes in November and lasts until May, in the hills.

The first experience of our company was to follow the old logging methods of Michigan, Minnesota and Wisconsin. We soon found, however, that the climatic conditions were different in many respects, especially in regard to the logging in snow. No freezing weather prior to the fall of snow, hence it had no sustaining resistance as in the East, on account of lack of foundation. It would thaw out and a road that was all O. K. in the morning, the horses would break through the crust and practically compel a cessation of operations in a few hours.

Investigate Steam Logging.

This condition drove us to seek new methods. We were not accustomed to steam logging except in the utilization of geared locomotives and steam loaders. This was the extent of our knowledge. A trip was taken to the Coast to learn all we could of the availability of steam, with a view to its adoption. In the selection of equipment we made some mistakes. First we selected engines with insufficient drum surface. We soon found out the limited amount of timber on the ground demanded an engine with a large cable carrying capacity, in order to save changing settings.

Our average yarding line was approximately 2,000 feet to start with. Later this was increased to 5,000 feet. In this connection let me say that we found a 5,000-foot haul impracticable, in the ordinary ground yarding practice, as carried forward on the Coast, where not over 1,500 feet is considered maximum, with 800 feet and less being used in many cases. The evolution of the ground yarding system of 5,000 feet, into the use of a sky line, system for a rugged, rough country, was undertaken.

Birth of the Sky Line.

Briefly, this system consisted of an ordinary two-drum donkey, to which a third drum was added, using the main drum for a standing line; the haulback drum utilized as a haulback; while the third was used as hauling-in drum. This line was supported on 9-inch poles at intervals, dependent upon conditions, from 500 to 2,000 feet. On this line was mounted a very simple two-wheeled carriage. From this carriage we ran out a line about 100 feet on each side. Loads of 500 to 2,000 feet were embraced in an ordinary choker, drawn up to the trolley through an 8- to 10-inch block on the carriage, and then hauled in with the pulling or main line drum. The lines were main or standing 1⅛ to 1¼-inch of ordinary hemp core line. The other lines were ⅝ to ¾-inch, of ordinary 6-19 strand.

The daily capacity of a rig of this type was a little better than that of the ordinary ground yarder on fairly level ground. We worked this system in very rough country, where it would have been practically impossible to operate a ground yarding system. Hence we felt rather encouraged with our experiment. But we soon found that to go back 3,000 to 3,500 feet or farther we were losing too much time in carriage momentum. This caused us to look around for some other plan which would enable us to cover a larger area of country, where railroad building was prohibitive, and to avoid relaying or tandem yarding. This development was reached in 1911.

Transition to Cable Tramway.

We believe if we could run a single line with a trolley carrying a single load of 2,000 feet, that we should be able to operate a system carrying a series of loads, just as we

had witnessed in ore, coal and other industries. The single trolley successfully negotiated the supports which held the line in position.

The system consists primarily of three lines—two stationary and one endless cable; the endless line forms a circuit around the two stationary lines. We used the same supports that we did on our sky line, and proceeded to install an endless line 1½ mile long, in a straight line. We used the same lines as in the sky lines, viz.: 1⅛-6-19 main, and ⅝ return empty, and ⅝ traction or power line. We then proceeded to build a number of trolleys, figuring on spacing our loads about 500 feet apart. The construction of these trolleys gave us considerable care. We finally worked out a trolley which is very simple and weighs about 30 pounds. It is made of cast steel, with a light 8-inch manganese wheel. The lower end of the trolley forms a hook, in which the power line lies and over which a D-shaped link is dropped to where a ⅝-inch choker chain, 14 feet long, is attached. The chain is then passed around the load and dropped in the toggle. The toggle link then locks the toggle. The chain, acting as a wedge, has a tendency to stretch the link, thereby increasing the strain on the D link and insuring increased traction friction.

Any ordinary 7x9, 2-drum type of engine will successfully furnish abundant power for a 2-mile cable tramroad. Originally, two drums were utilized, but experience proved that the two drums were not a success, for the reason that the enormous strain on the shafts broke them repeatedly and caused general demoralization. We abandoned drum No. 2 and in place cast a capstan in two pieces and bolted it to the main drum, leaving the original drum intact. Three turns are taken around the capstan, the line at the outer end running through three 10-inch blocks, two outer blocks acting as spreaders. The tail block has attached about 25 to 30 feet of cable, made fast to a convenient stump, thereby allowing for an adjustment of tension as circumstances demand.

The Rollway.

We drop our main and traction lines down to four feet of the skids of the rollway. We assemble the logs under or beside the line, make up our loads with two trolleys for each unit; give the go-ahead signal by ringing a telephone bell, and our load starts on its journey to the landing. Other loads are made up in succession at intervals on the line as desired. In this connection it may be well to state that we have built two tramways—the first of which was straight and continuous; the second one, the present line with curvatures. On our first line we spaced the loads about 500 feet apart. We are now spacing our loads about 150 feet apart. The time to make up a load at the rollway is about one minute, the same time being ordinarily required to release at the other end.

After the first load reached the landing, and it was tripped, we signalled the loaders, and when the following loads reached the landing the engine remained stationary until a signal from the rear was received. This plan worked successfully.

Five million was taken out over this line in 1912. This is the history of cable tramroad operation as far as the Potlatch Lumber Company is concerned.

Second Installation—Negotiating Curves.

Encouraged with the success of our first venture, we decided to take a further step. The new location selected required a line of 1¾ miles. The sharpest curve negotiated is 43 degrees, which is made on three supports spaced 100 feet apart. No trouble has ever been encountered in transporting loads up to 80 feet. In front of these supports at the curves a 7-foot pipe roller hung to a guyed gin pole vertically was installed to keep the position of the traction line sufficiently far from the carrying line between loads. Speed of traction line is about 250 feet a minute.

The curves could not be negotiated on the ordinary supports we had been using, which involved the use of a 12-inch wheel, as it had a tendency to cause the support to pull out horizontally, getting in the way of the trolleys. A "fish-hook" shaped support was designed with a groove for the cable to lie in and still permit the trolley to pass unobstructed. This plan works satisfactorily, and solved the curve problem.

A height of 25 to 30 feet is practicable for the operation of a cabletram. In our case we had originally installed poles as high as 105 feet, for the reason we had not learned how to hold the cable in the supports without having the line uniform in hight from the ground.

Separate Cable Units.

The above results were achieved with a continuous line, but we soon found by experience that it would be better to divide the line into two sections, on account of the heavy strain incidental to transportation of forty-three to forty-five loads on the line simultaneously. This problem was solved by erecting two gin poles at 45 degrees incline, spaced 15 feet apart. The line from the rollway was reeved through two blocks and a box filled with rocks attached to the line to act as a tension anchor. The same plan was pursued for the line coming from the landing. A connection was made by using an "I" beam section and a piece of common 1 by 10 iron 15 feet long, to which a loose section was attached with a hinge, one end resting on the cable which conducted the trolley from the cable on to the track, and the other end, the operation was reversed, shifting the trolley from the connection to the line.

After operation for a time, it was found there was a marked tendency for the slack to collect from the back end of the cable to the station, allowing the counterweight to reach the ground. On the opposite side of the transfer the tendency was to carry the slack toward the engine and lift the counterweight. To overcome this condition we decided to make the line in four sections and abandon the weights. This was accomplished in the case of the 15-foot span by passing the line through the connection, fastening the end of the line to stumps.

In the second section, the gin poles are placed only about 3 feet apart, with a connection track about 4 feet long to transfer the trolley—which gives satisfactory results, and is cheaper to erect.

The capacity of a tramway, as far as our experience shows, indicates that the ability to take care of the logs at the lower end is the sole governing factor in its capacity. It would be safe to say that 500,000 feet could be transported in ten hours. We are handling about 150,000 feet.

Additional rollway could be established for loading purposes. We are only using one terminal at either end of the tramway. Several landings could be utilized, as desired, for the segregation of timber, or to give greater capacity to install additional loading facilities.

Cost of Construction.

The cost of construction varies with the country and the duties imposed. As to a fair average cost of a line similar to that of the Potlatch Lumber Company, under like conditions of country, after the right of way is cleared and material on the ground, such as hangers and supports, six men could erect gin poles and hangers for both return and carrying line a mile in length, in five days, employing the services of a team of horses. A fair estimate, including clearing right of way in the Panhandle of Idaho, would be, say, $5,000 to $6,000 a mile, exclusive of the engine. In this estimate the cost of building rollways is included. In our case we cleared a right of way so as to be sure when we took out the timber our operations would not be interfered with through trees falling on the line.

By constructing the line in units, it permits transporting the material as desired. Extensions are made by simply splicing the power line after standing lines are up, with supports spaced not over 400 to 500 feet apart. Greater spans are practicable if the contour of the country will permit.

This is an item which is very light; with good gin poles well guyed, the upkeep is practically nominal.

It is our judgment that a track strand type would probably give best service, due to the smoothness of the rope, greater strength, less stretching, due to the lack of manila core; and also due to the heavier wires used in its construction. The return carrier line requires fewer supports owing to the lessened load to be transported.

Two men are employed to release loads at the landing and replace the trolleys on the return line, and a man to grease the trolley every trip; the hauling crew consists of one engineer, a fireman and a wood buck. An engineer for the loading engine, which takes steam from the same boiler, constitutes the operating force of the tramway proper, while six men load and spot the cars, as the grade is quite steep; and to insure safety each man takes a brake when the cars are spotted. On the upper or loading end, five men are employed.

Transfer Stations.

Two transfer stations are required on the return line, on account of the contour which causes the return line to drop down abruptly and rise again, which would have the tendency to make the line carrying back the empty trolleys rise above our return line when we applied the brake, which would have a tendency to throw off the empty trolleys on account of the sudden jerks.

The braking is done by the engineer and consists of an ordinary friction brake.

If a gravity proposition were encountered the brake should be located at the upper end. Our experience shows that we employed this system successfully by handling 4,000,000 feet on a gravity line; the loaded trolleys brought back the empties, a hand brake with a 16-foot lever giving ample power and controlling twelve to fifteen loads at one time. The line was straight.

Tramways of this description are designed for special conditions and are not supposed to displace railroads where favorable conditions of operation are obtainable, but can be operated under conditions where railroads are not possible.

In order to overcome the necessity of the cable forming abrupt angles in a rough country, it is possible to design transfer connections, built on segments, and bolted together, thus insuring straight tangent for the cable.

Distance Between Supports.

It is safe to say that 500 to 2,000 feet may be regarded as proper and safe distances for carrying the line between supports. Hanger spans would require large cable, according to load carried. The main carrying line is 1⅛ inches, which has a breaking strain of 56 tons, with a working strain of 11.2 tons. A 1¼-inch line has a breakng strain of 67 tons, and a working strain of 13.4 tons. A 1½-inch line has a breaking strain of 96 tons, with a working strain of 19.2 tons. These figures are submitted by the wire rope makers, and give an idea of the actual working strain which cables may sustain. For our new line we have purchased 12,000 feet 1¼-inch track strand cable. We expect to erect this line in 2,000-foot units. Sky line may be used in conjunction with the cable tramway, or ordinary ground yarder.

L. T. HAYS, OF SAN FRANCISCO, CAL.:
United States Steel Products Company.

In our case, we used horses for yarding purposes, on account of the experiment we were then making which we felt would not justify utilizing logging engines.

The tramway makes the best possible use of old cables for gyp lines. Any old line sent to the scrap heap can be successfully employed.

As very much depends on the strength of the choker chains, it is very advisable that the highest test chain be used, as the difference in efficiency makes the difference in cost negligible.

It is our intention to build an automatic lubricator to travel on the trolley, and thus insure perfect lubrication, which insures not only a marked reduction in friction load, but increases the life of the cable.

In connection with the building of the cable tramway, too much praise can not be given to the loyal crew who assisted in its construction. Practically every man on the job lent valuable assistance in the way of ideas, many of which are incorporated. Without the efficient aid of my coworkers success would have been either very much delayed, or its accomplishment perhaps made impossible.

Adaptability to Heavy Timber.

I believe it is entirely feasible to build tramways to transport logs up to any size. The requirements are heavy cables and supports to meet the demands placed upon them. I understand that a company in British Columbia, logging in heavy coast timber, is making preparations to install an 18-mile tramway. Distance is no barrier to successful operation.

The Sharpshooter.

It may seem rather amusing to state how certain difficulties were anticipated and overcome in the building of the cable tramway. Every logger, like a sailor, has to devise some scheme to help him in a hard pinch, which is sure to come. The problem which required much thought was how to release a unit load of logs suspended in the air, perhaps 80 feet, and if by chance one end of the choker should come loose, leaving the load dangling in the air, the damage which would be wrought to the line will at once appeal to every logger. But how were we to "turn the trick"? We had no airmen or aeroplanes as part of our logging outfit. We thought of every conceivable plan to overcome this difficulty, which must be solved. Finally it dawned on Billy Watts one night that he could shoot with a rifle the trigger or toggle link which held the load. This was the solution of the difficulty. My trusty foreman, Billy Watts, is a crack shot, and you can see him every day pacing up and down the line, carrying his 30-30 rifle on his shoulder. In order to make a little better target we are welding a lug on the toggle link, which will not only provide a better mark for the "gunner" but will also make it simpler and easier to release with the use of a peavy at the landing.

In conclusion will say that it is my belief that within a few years we may expect to find cable tramways of various types, coming into very general use. The value of wire rope for logging purposes is only becoming appreciated.

Because of the late start of the session, discussion of papers was practically abandoned and an attempt was made to catch up with the schedule. The Chair introduced L. T. Hays, tramway engineer of the United States Steel Products Company, San Francisco, who he said would tell of the advances made in European countries in the use of cableways.

Mr. Hays spoke on the "European Logging Tramways of the Bleichert System," explaining the aerial tramways and their application to the logging industry. He told of the origin of the aerial systems and showed a number of photographs to illustrate certain points about them. His paper follows:

CABLEWAY USE ABROAD.

Evolution of Inventions in Europe Described in Detail by L. T. Hays, of San Francisco, Cal.

The object of this address is to place before you the subject of aerial tramways as applicable to the logging industry; but in order to show that aerial tramways have long passed the experimental stage, and are now recognized as a very essential means of transportation, it will be necessary to give a short history of this method of transporting materials.

Aerial tramways have been placed on the market and exploited under various "systems," and these separately distinguished by the names of the patentee or manufacturer, but there are really only two distinct systems; one, the "single-rope system," in which one rope performs the functions of propelling and supporting the loads; the other, the "double-rope system," in which a large cable is drawn taut and serves as a track upon which carriers with their pendant loads are propelled by means of the second, or traction rope. This traction rope is usually of a smaller diameter than the track cable, and is operated endlessly around driving sheaves located at one of the terminals.

Originators of the System.

Charles Hodgson, of Richmond, England, took out some original patents in 1868, covering both the "single and double-rope systems" of tramways, but owing to the difficulty Mr. Hodgson had at that time in securing a suitable cable for track purposes, he paid little or no attention to the "double-rope system," but worked on the "single-rope type" and placed several lines in operation in the British Isles and on the continent. There was a large field offering in the northern part of France, and many small "single-rope" lines were quite successfully operated there, but the class of traffic that could be handled on the "single-rope system" was very limited owing to the fact that the loads carried were necessarily light and were compelled to travel at a rather slow speed to avoid serious operating difficulties. Mr. Halladie took up Mr. Hodgson's "single-rope system" in America, and succeeded in operating several lines for transporting ores in the mining districts and grain in the wheat belt, but the single-rope tramway was not so well received in America as in Europe, and today it has been almost entirely superseded by the "double-rope system."

Double Rope Type.

About five years after Mr. Hodgson took out his first patents, Adolph Bleichert, of Leipsic, Germany, recognizing the limitations of the "single-rope system," started to perfect the "double-rope type," but was somewhat handicapped owing to the fact that no satisfactory track cable was yet on the market. However, Mr. Bleichert was so successful in his new undertaking that in 1874 he took out numerous basic patents covering the details of the "double-rope system," and became the pioneer in this field. The Trenton Iron Company, of Trenton, N. J., which manufactured wire ropes early in the eighties, became interested in the subject of aerial tramways, and coöperated with Mr. Bleichert, and subsequently designed a cable to meet the special requirements imposed by the aerial tramway, thus eliminating one of the serious difficulties that confronted Mr. Bleichert. This special cable, known as the interlocked type, served admirably for many years, and was superseded by a later design, known as locked coil, which is now used almost exclusively for track cables on aerial tramways. During the last forty years there have been over three thousand lines of the Bleichert system of aerial tramways erected, and each of these installations has been of special design to meet the requirements necessary to handle almost every kind of material, both raw and finished, that one could imagine. There is hardly a commodity that has not been affected beneficially through the assistance of an aerial tramway.

General Availability of Tramways.

When one thinks of an aerial tramway he is apt to picture a method of transportation used only in mining districts, but in this country alone the woolen mills of Rhode Island have found aerial transportation profitable; the eyeglass factories in Massachusetts after thirteen years' experience have found this mode of conveyance of their product quite necessary, and the Du Pont Powder people are using this system extensively to handle dynamite and its raw components. Besides the above we, of course, find tramways in their usual field conveying ores, grain, sand, gravel, soda, etc.

Many of you are no doubt familiar with the aerial tramway as it has been designed for the transportation of ores and other similar products in mountainous districts, but you have little thought that this same idea and same system could be as successfully used to transport your logs from the woods to the railroad and in some cases direct to the mill.

Tramway Service in Europe and Africa.

For many years aerial tramways have been extensively used in carrying sawed lumber in small quantities, but it has been only a matter of about five years that the aerial tramway has been seriously considered as a help to the logging industry. Usually the severe requirements in the logging camp have been considered to be a little beyond the field of aerial cable, but the accompanying photographs will give ample proof that the Bleichert system of aerial tramways is surely invading this field. Already, logs 5 feet in diameter and from 16 to 50 feet in length are being satisfactorily conveyed a distance of five and a half miles by the means of aerial tramways. One notable system that was installed in the Usambara Mountains in Africa was fully described in the January issue of the *Timberman*. To go into detail and describe any other logging tramways would simply mean a general repetition of the above mentioned article, because different installations vary only in detail, the general results and finished equipment being quite uniform. But it would perhaps be not amiss to mention in passing a few of the aerial logging tramways that Adolph Bleichert & Co. have in operation in various parts of the world. At Kolozsvar, Hungary, there is a logging tramway 7½ miles long, which serves two purposes; one of bringing the logs to the sawmills, and the other of conveying the sawed material to the shipping point. A line built near Podul Jloie in Roumania is over 10½ miles long; another installed for the Prometna Bank in Belgrade is about 3¾ miles long, with a fall of nearly half a mile, and runs from a plateau down a steep mountain side to a river. This line is of particular interest, due to the fact that the ground is particularly rugged; and in order to avoid sharp, vertical angles, tunnels were made through the rocky ridges.

Tramway Negotiates 98 Percent Grade.

When the logger studies the accompanying photographs, he usually finds that the conditions shown and items described do not meet his particular requirements, and he is often inclined to form the opinion that an aerial tramway would not meet his needs. But that is just where the manufacturers of the Bleichert system have proven themselves of the greatest assistance, for their engineers and designers, with their wide range of knowledge covering experience gained throughout the civilized world, are able to solve the problem of handling very heavy tonnages over the roughest profiles. In Africa they are readily negotiating grades of 98 percent, or, in other words, a slope of about 11 degrees, overcoming a fall of about 4,700 feet in a distance of 5½ miles. Elsewhere single spans upward of 3,000 feet in length were necessary in crossing deep, wide canyons.

The large success that has attended the efforts of Mr. Bleichert has been largely due to the careful attention given the engineering and mechanical details of his equipments. He has maintained that "it is not possible to transport cheaply with a cheap plant which is constantly requiring repairs." This careful attention to details has resulted in the production of aerial tramways by the Bleichert system that are able to be kept in continuous operation day after day for periods of eighteen to twenty years.

Logging Tramways a Necessity.

The logging tramway has come to be a necessity, as the logging operations are carried back into the mountains further from the railroads, and in the more rugged portions of the country where the transportation costs become prohibitive by means of the logging railroads. Often times it has been found that an aerial tramway, with its low maintenance and up-keep costs, has been able to transport material at a much lower rate than by any other means, even over comparatively level country.

Installation Cost.

It is very difficult to get a set of installation cost figures that will meet general conditions, because you can readily understand that an equipment specially designed to handle comparatively small timber would hardly meet the requirements of the big timber on the Pacific coast of the American continent; then, too, the contours of the country over which the logging tramway would operate would vary considerably, thus varying the number, as well as heights, of the intermediate towers and stations. The terminal requirements differ radically according to the topography of the country and the demands of the operators; sometimes steel towers and terminals are desirable and even necessary in timbered districts; therefore, specific figures in this connection would often be misleading, as aerial tramways completely installed and operating have cost from $1 to $10 per foot of length. Thus, it is obvious that each separate installation must be considered individually, and special designs made to meet the exigencies of the problem under consideration.

The American logger has not as yet paid much attention to aerial logging tramways, but it seems safe to predict that numerous installations will be made on this continent during the next few years, because logging costs are rapidly increasing as operations are carried farther back from the main lines of the railroads, thus making some change in transportation methods imperative.

R. W. Vinnedge, of the North Bend Lumber Company, North Bend, Wash., was the next man on the program. Before reading his address entitled "A Composite Flying Machine," he said that he had no machinery or anything of the kind to sell and was not trying to exploit his system of logging. He also acknowledged credit due the Lidgerwood, MacFarlane and other overhead systems, saying that in his system he had blended several of the principles of those systems with some original ideas.

A COMPOSITE FLYING MACHINE.

By R. W. Vinnedge, of North Bend, Wash.—Yarding Item in Need of Revision.

In presenting this paper I wish to supplement by stating that I have nothing for sale in the line of aerial devices for logging, and this dissertation is in no wise to be considered in the light of commercial exploitation. Rather, I am about to tell you of what may be considered a home-made device, which has developed into somewhat of an entity as the result of various experiments extending over a period of some eighteen months.

I should not have had the temerity to impose this paper upon the congress had it not been suggested by individuals who have visited our operations and become interested in our methods. Of those who are better informed in logging methods and of wider experience than I, I beg indulgence for the benefit of those who perchance may be interested in this system, which in logging nomenclature may be classified in a general way as a flying-machine.

I further wish to pay my respects to the aerial logging systems known as the MacFarland Sky Line, the Lidgerwood, and other types, and to state that the substance of the system I shall explain is a blend of some general principles employed by these companies, together with certain other principles which were patent to us as loggers, and distinctly original.

I therefore take pleasure in acknowledging at this time the benefits we have derived from an observation of these other operations.

In common with many other logging companies, we have of late years witnessed the passing of our timber on low levels, and are confronted with the problem of producing logs from smaller timber, on higher levels, and at a greater distance from the axis. To do this the necessity for new methods was quite patent. The different stages of evolution by which the logging industry of this country is evidenced are epochal; each era revealing circumstances and conditions peculiar to itself; each succeeding era presenting problems which were new but none the less insistent.

I am not so sure that logging methods have kept pace with demands made upon them through these different epochs. It is true we have substituted in turn the horse and the donkey engine for the bull, the railroad for the skid road, and many other accompaniments all representing progress, but the fact remains that in spite of our high powered donkeys, our mammoth locomotives and miles of railroad we are today zigzagging around among the stumps just as the bull puncher did a generation ago. The stumps were his great problem then, and so they are ours today.

I believe our yarding item is susceptible of greater revision than any other in our cost of production. It is by far the largest item in the entire classification, and should necessarily be attacked more vigorously with a view to a revision downward.

Transition in Logging Methods.

I believe we are today in the yarding epoch. The advent of the overhead cableway is to my mind a solution of the yarding problem. While overhead logging methods have been employed in one way or another for the last ten years, it has not been seriously considered and extensively utilized in the Northwest until within the last four or five years. In this short space of time it has passed from the crude, erratic, good-today-bad-tomorrow stage which marked the genesis and experimentation period to the efficient, dependable, run-every-day-article whose output may be estimated with some degree of accuracy.

And in the transition we have eliminated the necessity for an endless shifting of chokers and pulling of line to permit perhaps one, and seldom over two, logs to bore a tortuous passage through acres of stumps and debris, causing the lumberjack, like Job, to curse the day he was born.

Instead, there has been substituted a method which makes it possible by a trifle more initial expense and preparation to pick up not one log but many times half a dozen logs where they lie in the woods and transport them to the landing with seldom a stop after the go-ahead whistle.

In contemplating this method of ours we bore in mind the desirability of two features; namely, simplicity and economy of installation. Accordingly, we have worked out our method using as the propelling force an ordinary two drum 11x13 Willamette yarder with a straw drum.

Any operation supplied with the ordinary donkey engines and rigging may become fully equipped for aerial logging with an expenditure of not to exceed $1,500.

The Aerial Line.

The aerial or carriage line is permanently suspended from a spar tree at the landing to a tail tree at the back. This line consists of 1,500 feet of 1¼ or 1⅜-inch "Yellow Strand" wire, varying in diameter with the size of timber to be logged. In this connection will say that we believe 1¼-inch diameter wire is sufficient for timber scaling 2,000 feet, and from 2,000 feet to 4,000 feet 1⅜-inch diameter. An advantage in using the smaller diameter line is that it may be converted into chokers after it has become worn somewhat and rendered unsafe for overhead use. One end of this line is first made fast to a stump or tree directly in rear of the tail tree, the other end passing through bull blocks hung in the tail and spar trees respectively, and tightened by means of a block and line used for this purpose only. This tightening line is only 350 feet in length, and is made fast to two stumps, passing through a block attached to the end of the aerial line, thus involving two anchors rather than one.

We find that while it is practicable to operate a distance of 1,500 feet the best results are nevertheless obtained at approximately 1,000 feet, especially after a crew of men become familiar with the method of changing from one tail tree to another, which minimizes delay.

We find it economical to yard logs lying from 150 feet to 200 feet on either side of the aerial line. Farther than this the strain on equipment due to the logs lodging behind stumps and the resulting danger of uprooting the tail tree are features which overbalance the slight gain in additional territory covered at one setting.

Other Wire Used.

Fifteen hundred feet of 1⅛-inch line is carried on the main drum as a yarding line, 3,000 feet 9/16-inch for haulback purpose, and 2,500 feet of ⅜-inch straw line.

The spar tree is reinforced with six 1⅛-inch guy wires each from 200 to 400 feet long, while the tail tree has only one guy line other than the aerial line, which forms a support in itself.

The Carriage.

The carriage is constructed of ¾-inch boiler plate reinforced with 1-inch straps and includes three 5x14 manganese sheaves; two of which operate on the aerial line. The third sheave, while at times not used, was originally intended to accommodate the yarding line.

The most distinctive feature of this system and the one which will be of the most interest to you, no doubt, is the method involved in engaging the yarding line to the carriage and yarding the log.

Through the different ramifications of this feature one great trouble has been our inability to secure sufficient slack when and where it was needed, as, for instance, when the logs were deposited at the landing the chaser experienced difficulty many times in disengaging the chokers.

To obviate this defect, we have adopted the present method of engaging the yarding line to the carriage, which is extremely simple.

From the donkey the yarding line is passed through a bull block high in the spar tree, and is attached to a clevice at the bottom of the carriage; at the same time passing through an ordinary 12-inch yarding block which is used for raising the logs.

To the clevice or goose neck of this block is attached a ring carrying two buttlines, to each of which two chokers may be attached, making it possible to accommodate four chokers in all. To this last mentioned ring is attached the haulback.

We first sought to lift the log from the ground and lock it to the carriage, but we found such method unnecessarily cumbersome and discarded it.

We later passed the yarding line through the lower sheave of the carriage, attaching the end to the clevice at the bottom, lifting the logs by a block rendering in the bight so formed, but did not lock them to the carriage.

Both mentioned methods brought the entire strain upon the aerial line, which is a very vulnerable factor of any overhead system.

By referring to the photographs you will note that the strain of lifting the logs is equally divided between the aerial line and the spar tree. This feature has been quite thoroughly tried out and has proved quite satisfactory to date.

The logs are not suspended free in the air in the process of yarding; only one end being elevated sufficient to enable it to sheer over stumps and debris.

Wear on Line.

The wear on the yarding line is negligible except that portion which renders through the 12-inch yarding block in yarding the log. It may therefore appear that an 1⅛-inch diameter line is excessive for this purpose, but we believe it is more economical in the ultimate than the smaller one, inasmuch as it is fit for chokers following its yarding service.

The strain on the haulback is, however, greater than in ordinary service, due to the necessity for deflecting the yarding line and block at right angles with the aerial line in picking up logs.

Our records show a yarding line in this service with a credit of 9,000,000 feet and still retaining 50 percent of its life when discarded for chokers. The haulback is not used for the purpose of snubbing the logs, and is handled in the same manner as any ground yarding operation.

Adaptable to Any Kind of Ground.

We have employed this system on steep side hills, yarding logs both up and down, over hog backs and through gulches, and in most cases the force of gravity operates as a brake to such an extent as to automatically control the log. In extremely precipitous country, however, more or less trouble is experienced with logs running out of the chokers.

Two Aerial Lines Used.

Two aerial lines and extra bull blocks are employed which greatly facilitate changing from one tail tree to another. The time involved in these changes averages about three hours.

Loading.

The loading of logs in connection with this, as well as all other aerial systems, seems to be the weakest link in the chain. Seldom a day passes when there are not more logs yarded than can be loaded, by a considerable percentage. The loading crew, always hard pressed in the past, has today its cup of sorrow brim full, pressed down and heaped again. It is manifestly wise, therefore, to remove every impediment possible in order to facilitate the operation of this most important department. Accordingly, we construct what is known as the jump-up landing, use a gin pose, and crotch line, three very important factors in an expeditious loading operation. Where the crotch line is employed the loading block must of necessity hang directly above the center of the car, and therefore satisfactory results can not be obtained when the block is suspended from a guy line.

To compel the loading crew to select their logs from beneath the aerial line necessitates their working at a great disadvantage and a consequent loss.

A third man in the crew is quite desirable. Logs from the first two or three roads on both sides of the landing may be deposited on the landing, parallel to the car, by the aerial line, but as each succeeding road forms a greater angle with the track this is impossible and the logs accumulate in a huge pile, resembling jack straws, beneath the aerial line.

Three Engines Used.

We therefore at such times bring into play a third donkey for the purpose of swinging these logs into line on the landing.

In the abstract this would indicate a prodigal employment of machines, but the results in our case have justified such outlay. The third donkey involves the employment of only two additional men, an engineer and fireman, as the chaser attending this engine supplants the third loader. When we first employed this method our landing facilities were very deficient, causing endless delay to the loaders, and by using the third donkey we increased our daily output from 9 to 14 cars per day, with an outlay of only $6.50 additional.

In our particular case we have spare engines and prefer to use one of these rather than invest in a specially designed machine, but by far the more desirable arrangement would be a 3-drum engine.

The Scale.

I might continue indefinitely to dilate on this subject at the hazard of boring you, but after all the proof of the system is the scale, provided, of course, conditions such as topography, size and quality of timber attending each operation are considered. You will no doubt be interested in the results as revealed by our scale book. To quote figures at random would mean little to you by way of demonstrating the efficiency of the system I describe, because you can not see the ground or know general conditions under which the logs were yarded. Therefore I shall select the month of August, just passed, mentioning the results obtained, with the explanation that I consider them about average:

		Per day
Number days worked.....	26	
Number of logs yarded.....	3720	143
Total scale.....	1499250	57660'
Average per log.....	403	
Number of cars loaded.....	298	11½
Average per car.....	5030'	

Ground slightly broken, but on the average good.

For the first six months of 1913, during which we logged almost entirely by this method, our average scale per man exclusive of railroad men and cooks was 1,517 feet.

Speed of Yarding Line.

As before stated, we employ a 11x13 donkey with a gear ratio of thirteen to one for yarding the logs, which, needless to say, is slow and exceedingly heavy. Inasmuch as the power requirements are really negligible it is obvious that this item may well be sacrificed for speed, and therefore we believe far better results would be obtained by employing, say, a 10x11 donkey geared in the neighborhood of six and one-half to one. This would double the speed.

Not Adaptable to Large Timber.

In conclusion I will say that while we were handling logs scaling as high as 5,000 feet in the early stages of our experiments we have not, with out present device, yarded over 3,600 feet at one time, and I do not believe the success of aerial methods in handling large timber is remarkable up to the present time, but I am so entirely optimistic as to the future that I contemplate with confidence its adaptability, through the compelling force of necessity, to any and all conditions.

Following Mr. Vinnedge's address the secretary read a number of letters and telegrams of regret from numerous loggers who were unable to attend. Among them were Peter Lund, Crows Nest Pass, B. C.; R. H. Burnside, Raymond, Wash.; C. W. Millett, Libby, Mont.; S. L. Boyd, Henderson, Mont. Following this the Chair announced a recess of 10 minutes.

W. F. Izett, of Oak Harbor, Wash., told briefly of the "New Era" cableway, which he said consisted of a cable of sufficient strength to carry any probable load suspended on properly constructed hangers. The cable can be of any make or construction that will do the work. The hanger, he said, is one of the most important, if not the chief problem. With the ordinary hanger, he pointed out that a heavy load will cause an abrupt deflection or crimp in the cable as the trolley comes in contact with the hanger.

THE NEW ERA CABLEWAY.

By W. F. Izett, of Oak Harbor, Wash.—Cable Can Be of Any Make.

The New Era cableway is briefly a cable of sufficient strength to carry any probable load, suspended on properly constructed hangers of practically "C" shape (which are held up by straps attached to trees or shears as the case may require) and which should be of sufficient length to give a degree of flexibility. The cable can be of any make or construction that will do the work. The trees or shears are a matter easily managed in ordinary logging operations. The hanger is one of the main problems if not the chief problem.

With the ordinary hanger a heavy load will cause an abrupt deflection or crimp in the cable as the trolley comes in contact with the hanger as much so as to make it impossible to get a heavily loaded trolley over it. To overcome this difficulty I connect with the hanger proper, by means of a simple steel link, what amounts to a piece of steel rail, 2 or more feet long, on each side of the hanger. This is clamped to the cable. When any size of load comes near a hanger instead of a crimp in the cable this clamp settles with the load at the end away from the hanger, giving a rigid or stiff approach. Actual use has demonstrated that with this device any conceivable log load can be gotten past the hanger without difficulty. (Only use equipment strong enough for the heaviest load required.)

To save the strength of the wire for carrying loads I conceived the idea of holding deflection in the standing line between the hangers. As any wire-rope man will tell you, a cable should have enough slack to allow a certain degree of deflection to be practically serviceable. So my deflection holder or tiedown device obviates not only the need of putting extreme tension on the line when it is set up but gives the line at least 50 percent greater carrying capacity and doubtless will more than double the life of the line.

This is practically the appearance of a New Era set-up. I am not a draftsman but this will indicate my idea of the use of a deflection holder. By this means deflection helps instead of hinders. I might have indicated an extreme contour, as the rough places are the ones in which the New Era will show to best advantage. The placing of hangers and deflection holders must be governed by the contour of the country over which the set-up is made.

On ordinary ground about ten to fifteen hangers to the mile would be required. But if wide gulches are to be crossed the length of the spans would be increased accordingly, and fewer hangers needed.

Can Be Set Up Anywhere.

Except where very heavy loads are to be carried it will not be found necessary to use the deflection holder at every span. It will of course be more easily set up in a fairly straight line, but by placing the hangers closed, and using

guy lines, curves can be readily made. In fact, it can be set up anywhere the materials can be conveyed on to the ground.

On ordinary ground it can be set up and put in operation while a right of way is being swamped for a skid road, to say nothing of the time required for putting in a railroad. And when the work on that set-up is finished, the whole thing can be removed to another place and nothing wasted in the way of grades, etc.

The trolley the plan of which I have drafted has greater length of frame that the ones used in any tests and also wheels 14 inches in diameter, instead of 10 inches as on the old ones. Will also use manganese steel wheels; as this kind of work is much more durable and also of greater toughness.

The hangers, clamps and trolley frames are of the best cast-steel and shaped to get the most benefit from the metal used. Another important item is simplicity of construction, a hammer, monkeywrench and plyers being all the tools required, with little need of them.

For Use in Yarding.

For yarding a special block is suspended from the carrying bar of the trolley and the main and the haulback (or trip) lines run through it like through any corner block; but a latch prevents the load dropping to the ground when coming to the landing. The donkey can be run much faster than on groundwork, one thousand feet a minute for the haulback and about half that speed for the main being a fair rate for the trolley. For roading a trolley should be used at each end of the load, thus permitting it to run freely and smoothly and also just as rapidly as need be.

Common logging donkeys can be used for this work, but specially constructed machines with much less weight but greatly increased speed will ultimately result as this and other cable systems come into general use, as will surely happen when operators realize the many advantages over the ground drag.

The cost of construction of the New Era is not great when it is considered that the trolley wheels are the only part to wear out. But I have a desire to develop it into a system that will be of benefit to the men who do the work of getting out the logs, my great desire being to bring about a "new era" in camp life where my system is used. The only way to perpetuate such a work will be to work it on a royalty basis.

Time will be required to work out this part of the system. But it has always seemed to me that conditions about the woods might be made to work for the elevation of the men, rather than for their degradation as is too often the case.

Committee Appointments.

The following committees were announced by Mr. Donovan:

Resolutions—W. W. Peed, Eureka, Cal., chairman; James O'Hearne, Mt. Vernon, Wash.; H. W. Sessoms, Arlington, Wash.; W. E. Wells, Somers, Mont.; J. P. Van Orsdel, Portland.

Memorial resolutions—John R. Toole, Missoula, Mont., chairman; E. S. Grammer, Seattle; T. J. Humbird, Sandpoint, Idaho.

Auditing and finance—J. S. O'Gormon, Portland, chairman; George W. Johnson, Seattle; T. J. Humbird, Sandpoint, Idaho; T. Jerome, Seattle, and George Weisel, Missoula, Mont.

Nominations—J. D. Young, Portland, chairman; E. G. English, Mt. Vernon, Wash.; John O'Brien, Vancouver, B. C.; E. Elfendahl, Lamoine, Cal.; H. J. Spalding, Spokane.

Place of next meeting—E. J. Palmer, Chemainus, B. C., chairman; E. G. English, Mt. Vernon, Wash.; A. W. Laird, Potlatch, Idaho; W. E. Wells, Somers, Mont.; A. H. Powers, Marshfield, Ore., and A. J. Morley, Aberdeen, Wash.

The congress was in receipt of a wire from John McDougall, Fernie Lumber Company, Fernie, B. C., regretting his inability to be present. In his absence his paper, "Aerial Skidding," the next on the program, was read by George Weisel, Missoula, Mont.

AERIAL SKIDDING.

By John McDougall, Fernie, B. C., Who Described Successful Use of Skidder in a Rough Country.

The aerial skidder which we are operating was manufactured by the Washington Iron Works, of Seattle, and, while undoubtedly there are minor matters in connection with it which could be, and perhaps have already been, improved upon, we are of the opinion that this machine, owing to the comparatively small amount of rigging in connection with it and the consequent minimum delay with which it can be moved around, is the most suitable machine for the class of timber and the rough mountainous country in which we are operating.

It is a four-drum machine, one drum containing 3,000 feet of one-inch cable, being the main line, one drum containing 3,000 feet of three-quarter inch cable, being the haul-in line, and one drum containing 6,000 feet of five-eight-inch cable, being the haul-back line. The other drum is intended for loading the logs on to the cars. We have not used it for this purpose but have used and found it very handy for skidding the trees on to the rollways to be cut into log lengths.

Locating the Machine.

The machine is set up at the landing, the main line being run out and made fast to a suitable tall tree. In the event of the main line sagging after being stretched so as to come too close to the ground, or striking the ground on account of the uneven nature of the country, one or more gin poles are put up and the main line is held up from the ground by one of the "C" hangers, the open side carriage being specially constructed so as to allow the bottom part of the "C" hanger to pass through it.

We have found that we can cut a swath 150 feet wide or 75 feet on each side of the main line and handle it expeditiously. But our operation being side hill work we have not considered it advisable to try to go farther away from the main line than that distance. We have operated advantageously, practically speaking, with the whole length of the main line; that is, 3,000 feet.

The slack pulling arrangement is simple and effective, consisting of about 30 feet of light chain hanging to the bull hook on the end of the haul-in line. The hook tenders carry a short length of chain, about three feet, with a swamp hook on one end and a chain hook on the other end. This is made fast to a suitable stump, handy to the main line, and as the carriage comes back from the landing the chain hanging from the bull hook is caught and made fast to the short chain, the carriage being allowed to go on into the woods until the necessary amount of slack has been secured.

We have found it most advantageous to fall the trees so that they will lie as nearly as possible at right angles to and with the top towards the main line. The carriage is then held stationary until the trees are up to the main line and clear of all obstructions.

The timber which we are handling with the machine runs about ten logs to the thousand and five logs to the tree. We pull in one or two trees according to conditions, at a time, the trees being cut into log lengths at the landing.

The minimum 10-hour day's work for the machine is 30,000 feet with a crew of 18 to 20 men, according to conditions, at a maximum cost of $2 a thousand feet, on an average skidding distance of 2,000 feet. This includes all working expenses from the felling of the trees to the decking or loading of the logs at the landing.

We are not operating at all this season and have therefore not really given the machine a thorough try out. It is new to ourselves as well as the men, but we are satisfied from careful observations made that with a crew of good live men we can put in from 35,000 to 40,000 feet easily and thus cut the cost considerably.

Comparison of Costs.

The country in which we have been operating the machine is too steep for horse logging to be practical, so that we are not able to make any actual comparison. Our average cost of logging with horses has been around $5 a thousand feet at the landing and we are so well satisfied, for the country in which we are operating, that the aerial system is the best method, being both cheaper and cleaner, that it is our intention to put in more of these machines and do away with horse logging entirely if possible.

The system is like any other innovation. It takes a little time to break in the men and get them used to the work and our experience when we first started to operate was anything but satisfactory, but they soon got the hang of it. One very important advantage of the aerial system is that you can operate almost as cheaply in 6 feet of snow as you can on bare ground. This will, however, be readily understood.

At 12:15 the congress adjourned for lunch, which was served in logging camp style on long tables arranged on the grounds of the park, and the attendants were in this way held for the afternoon session. During the lunch hour many of the loggers were entertained by the chute the chutes, the "Slide Kelly Slide" and other attractions of the park. Just before the afternoon session was called to order the large group of loggers present were photographed.

THURSDAY AFTERNOON SESSION.

The afternoon session convened after the loggers had been "fed and mugged." First of all the loggers were given a splendid musical treat arranged by H. M. Strathern, the Scotch bard. The music was furnished by Mrs. Charles Freeze and Miss J. D. Allen, accompanied by Mrs. E. Langley, all of Spokane.

Mr. Donovan announced that the ladies would return the next day at noon, and he expected a much larger attendance as a result. He, however, requested that Mr. Strathern allow the ladies to sing at least one Irish song as a part of the second day's program.

James O'Hearne, of Mt. Vernon, Wash., was then

W. F. IZETT, OF OAK HARBOR, WASH.;
Who Spoke on "New Era" Cableway.

introduced and delivered an address, the most important of the afternoon, on "How Shall We Teach Logging Engineering?"

TEACHING LOGGING ENGINEERING.

By James O'Hearne, Mt. Vernon, Wash., Who Outlined a Complete Course of Study.

I do not know why I was asked to outline a course of study for logging engineers, but since I have been, will try, though it is doubtful if I can add much to the good ideas we have had expressed by others in this congress in former years. I do not expect to give you a cut and dried course showing each subject to be pursued together with the order in which it should come and the prominence it should have but will dwell on the subject from a liberal standpoint, and tell in a general way how a logging engineer might secure his training.

If we are going to build a structure of any kind, the first thing we look for is the material. It might be well to dwell a little on the material we need to begin building a logging engineer. Physically, he should be sound and healthy enough to pass any of the United States Civil Service examinations; for there are few professions that will call for a greater amount of physical endurance than he will be called upon at times to show. I do not recommend any culling on account of statute but the general physical condition should be good.

Mentally, as to education, it would be well to start out with a good high school education, but exceptions might be made to this as we will note later. As to temperament and disposition, he must have staying qualities of a superior order; must be almost impossible to discourage once he has made up his mind; and must have a judicial sense that will enable him to weigh and compare different means of attaining his end and choosing the one most advantageous to all concerned regardless of his own preference. He must do his work for the love of the work, for many of the incentives that go with other work, such as applause, public praise, newspaper mention, or even high pecuniary fees will not be his. And here it might be well to mention the old fallacy of getting an education so we will not have to work. If he has that idea in the least, bar him from ever beginning a logging engineer's course. He is taking the course not to be able to get out of work but to enable him to do more and better work, and he will have to work with his hands, feet, and all of his muscles as well as with his brain. He must be ready to forego most of the pleasures of the city and even many of the pleasures of civilized life. His work will take him back pretty well from the haunts of men, spending much of his time in little camps; or further yet, he may spend much of it out in a tent or shack with only one or two assistants with him, so that he must not only be sufficient unto himself, as it were, but he must be an aid and encouragement to others who are around him.

Morally he must be all that a man should be. His work will naturally strengthen him in this way. A man's character must be warped indeed if he can spend his time among those all inspiring hills and forests and yet be a crook or have degenerate tastes.

Outline of Course of Study.

I will endeavor to outline a course that will be nearly, if not quite, self-supporting, not merely because of the fact that he may or may not have a thousand a year to spend on his education, but because I think it is a practical way.

Our universities have now all the courses that a logging engineer needs, except the practical logging and the application of the others to the needs of the logger. It will take one extra man for that and it is almost necessary that he should be a practical logger. The established courses that we will have to draw from are liberal arts and mechanical, mining, civil and electrical engineering. From the liberal arts course we will want English, composition, and one foreign language. Would recommend Spanish, as many of the undeveloped resources of the western continent are situated in the Spanish speaking countries. From mechanical engineering we want drafting enough to enable him to make intelligent drawings of any piece of machinery; enough machine practice to get the use and care of lathes, drills, and other tools; a knowledge of foundry work, and a study of the various kinds of internal combustion engines. From mining engineering we want geology, tool sharpening and tempering, and first aid to the injured. From civil engineering we want mathematics; surveying and mapping; railroad work, including the different steps of preliminary and location work, construction, railroad structures, maintenance and operation; and safety appliances. From electrical engineering we want the general principles of applied electricity.

After having borrowed so much from other courses, let us see what he will get from his own course.

1. Forestry: different species of trees, their special adaptation to certain regions, rate of growth, mechanical properties, diseases and decay, insect enemies, reforestation, fire protection, fire fighting, attention to fire-killed timber—how soon it must be logged, and the rate of depreciation of the different species—the best methods of logging to prevent waste and a general idea of shingle, lumber and pulp mills.

Here it might be well to mention the need of an acknowledged text book on logging. So far as I know, there is nothing of the kind at the present time. The nearest approach to it being the reports of the proceedings of the logging congress at its different sessions, and the able papers that appear in the lumber journals from time to time on phases of the industry. No doubt this book, if we had one, would need constant revision to keep up with the rapid growth and changing conditions of the industry. A book that had the latest ideas five years ago would be sadly behind today, as we suppose a book written today will be behind five years from now unless it be kept up. A book of this kind should embody all the latest and best in logging, and would suggest that it have an appendix containing a short history of the industry together with a dictionary of logging terms.

Preservation of Logging Terms.

We should preserve our language. Logging terms in common use a few years ago have gone out of practice and will continue to do so. While there may be no more need of these terms or of the operations they stood for, it would be very interesting and sometimes useful to know them. For example, with the increase of power, many of the methods of increasing power, such as "luff and sampson," have gone out of use and many working in the woods today could not put on a luff or some of the other devices used in earlier days. Still some of these can be used to great advantage today and a knowledge of them will enable a woodsman to pull himself out of many a bad hole. It is rather hard to tell how best to secure this book. Many who are competent to write, and have felt the need have not had the time to devote to it. It would take one man a great deal of time to collect and correlate the material, together with illustrations and drawings, needed for such a work. The work might be done by a committee of representative loggers appointed from the different districts, working in conjunction with the professors of forestry in our universities. Help on this work might be asked and, I think, secured from the Forest Service, which has been making a quiet but exhaustive study of the logging conditions of the Northwest. By such a distribution of the work it would not become an onerous task.

2. Engineering: cruising and making topographical maps; planning different methods for the removal of timber and estimating cost by each method; laying out and building skidroads, railroads, and cableways; figuring the most economical motive power for transporting logs to their destination; log dumps, booms, flumes, and chutes.

3. Logging: becoming familiar with each operation from the standing tree to the time the log is on the car or other means of transportation; kind and size of engines, blocks, and lines to use; when best to use long or short crew; long or short haul; advantages of different fuels; location and plans for camps; limit distance crew should walk; limit distance of ride, and number of men that can well be housed in one camp.

4. Sanitation: location of buildings with reference to each other and with reference to barns, pig pens etc; source of water; care of refuse from cook house; disposition of worn-out clothing and shoes and condition of sleeping quarters of men.

5. Efficiency: why, if it is a fact, are we getting less and less man power per number employed? Why know every man and his family and dogs if he has them? Why make it a point to pay special attention to any one hurt or sick? Why let him have a day off, if requested, even when you are needing him badly? What causes men to stay but a few days? Should a five-year hooktender get more than a one-year or a ten-day man? Can a spirit of rivalry be successfully fostered in the camp? Can premiums be used? Why have athletic or other games in camp? Baseball and football teams together with those engaged in other sports of a severe physical character have a shower and rub down after each game. Would it help a logger after a hard day's work? Would a little more leisure and time taken at meals be of benefit? A thousand more questions that need careful attention might be asked under this subject. Efficiency is one of the chief branches of engineering today and one of the hardest to get.

6. General affairs: engineers in general and logging engineers especially are prone to live too much in and for their profession. They lose touch not only with the happenings and questions of interest of the outside world, but also with those of other branches in engineering. This is a tendency that should be fought. The logging engineer should be a part of the community in which he lives; taking part, as much as may be, in the social, political, and public movements going on around him; shoulder his share of the responsibilities of government, and keep abreast of the times in local, State, national, and world affairs. Any community has a right to look to an engineer for information, not only in his line but in any line, and if he does not keep himself prepared to supply it, he is falling below the standard we have set for him. This is a subject not taught in school, but it should be, and can be, so directed that he will get the habit.

Actual Working Plan Would Be Interesting.

To get the education as outlined, I would like to see an actual working plan tried out. Let the teacher and his students spend six months of each year in the camps, say from April to September, inclusive; this will give them the benefit of the best weather for their woods work, the remainder of the year to be spent in the university. Give them no holiday except that the logger has, one week at Christ-

mas and one week at Fourth of July. Let them take a contract from some camp in operation to deliver the logs on cars at so much a thousand for the time specified. If the camp is a large one, they could contract but one side. A large camp for them to work in would be preferable, for, while they would be using one method, they would probably be able to see others in operation. It may be hard to find a logger who would take the chance of contracting a side to a bunch of schoolboys, but trust, after the first experiment, he would not hesitate again.

The chief men in the crew must be experienced loggers; the students, for the first year, filling in only subordinate places. They can fire donkeys, give signals, cut wood, help around the rigging, swamp, and take a hand at bucking and second falling as the opportunity arises. It will be necessary to change them off from one thing to another as time goes on so that each will get the benefit of the work. Again one may be moved from his side occasionally to help the blacksmith or do some other work that would not naturally come under the workings of one side. If the boys are what they should be, there will be no difficulty in getting these chances as there are always times in camp when an extra man is needed, and when the foreman finds he has an intelligent and willing bunch to pick from he will not be slow in utilizing the opportunity. This is all we could hope to do the first year. We could not get above the minor positions but by changing the men around they would become fairly familiar with repairs made to the donkey and other machinery, spliced line, the significance of block, block and a half, and other means of increasing power or changing direction of lead; and should have a fine healthy body and a clear head to begin the winter's work inside.

Should Work at Common Labor Wage.

The pay for the work should be at the rate for common labor and should be the same for all students, so there would be no friction when changes from one kind of work to another were made by the instructor. Profits on the contract should be divided equally among the crew. Students should eat at the regular mess house and with the crew, but separate sleeping quarters should be established, as the work of the day will have to be talked over and notes kept. The study of forestry and practical mechanics should be going on, as those are things that can be observed daily. During break downs, if waiting for material, trips can be taken to other parts of the work or into the forest. Rainy days can be spent to good advantage in the shop.

The second and third years will see the student taking higher positions and filling them more creditably. The third year camp accounting should be taken up with the other work, logs scaled, and cost statements made up. The cost statements should be made up from the actual costs in the camp if there is no objection from the management, and there probably will not be. In fact, most of the loggers like to have their cost statements examined. Outside work for the second and third years must be varied and it may be advisable to work different years in different camps in order to get all kinds of work. Some time in the course it should be arranged to help build a camp; this should not be hard to do when camps are moved and new ones built so regularly. During these three years, by careful watching, he will have had an opportunity to work at or around every kind of work in the camp, will have helped repair engines, build camps, fight fire, and in short, become familiar with all camp work.

The fourth year he should begin to run the compass, cruise, and run levels. It is going to be harder to keep up his earning capacity this year, but from the reputation he has established in his former years' work, he will probably be able to follow the work he needs, at least a part of the time, and draw pay for it.

The fifth year will see him laying out and grading logging spurs. If possible, a contract will be taken to lay out and grade so much road, and if no contract can be secured work in the crew should not be hard to get, especially at this season of the year when all camps are short on this kind of help. He will sharpen and temper picks, mattocks, and drills, get the use of powder, and help build bridges and trestles. He will get actual figures on cost of earthwork, rock work, and trestles. Will study the different kinds of trestles used in camps; namely, crib, bent, and pile, and financial or other reasons for the selection of kind used.

The sixth and last year, a fair-sized tract of country should be taken and all the engineering work done necessary to open it up for logging. Cruise, make topographical map, lay out all main lines, sidings, and spurs, and mark the best places for railways. This may have to be dead work so far as finances are concerned, but it may be that some firm would want just that class of work done and would be willing to pay the class just what it would cost it to have it done otherwise. This would help the class some, not a great deal financially but a great deal morally; it makes the work so much more interesting to know that it is going to be used. One of the most serious causes of indifference in much of the manual training work and field work done by schools is the fact that the products of the work are not used.

Our engineer should now be able to start in as a very efficient assistant to the superintendent of a large concern, or be able to handle the engineering problems of a smaller one. His future now rests with himself, but if he has undergone all this course has outlined for him, the future should cause him no terror. Six years seems to be a long time to put in on a course, but, consider that the student is probably 17 or 18 years of age when he started and has spent six months out of each year earning, and you will find the time is reasonable. He will graduate at 23 or 24 and that is about as young as one could well be and bear the responsibilities for which he has fitted himself.

Little time seems to have been left him for athletic work, but the live student will find time for that. He will organize baseball teams and other sports in the camps when he is working, and should come back to school in the fall fit to take his place in any line of athletics he leans to. The wise student will become as proficient in this line as his abilities and time will permit him.

It probably seems a waste of time to the student to give signals, fire donkeys, or sling rigging; but if Mrs. Andrews, the widow who owns and manages one of the most successful vise and anvil factories in the country, and who can boast that on her anvils were sharpened the tools that dug the Panama Canal, could find the time to learn to do each and every job about the plant, from the melting of the iron to the finishing of the anvil, and not only that but will ask no man in the plant to do more at his task than she can do in the same time, could take the time to learn this, the young man who expects to make logging his life profession can take time to learn something of the work he intends to follow.

Some provision should be made for the young man who has not had the advantage of a high school education but has a common school education, and who is intelligent and worthy. The entrance of such should be left a great deal to the discretion of the instructor and some provision made, by preparatory school or otherwise, for him to join the class.

This address was scheduled for considerable discussion and in addition to the names given on the program Dr. C. A. Schenck, of the Biltmore Forest School, and Professor Clothier, of Pullman, Wash., were asked to discuss this paper.

Mr. Donovan himself was on the program for discussion of this paper. He highly commended the thoughts expressed by Mr. O'Hearne, and said that in criticising the ideas it seemed to him that if anything was wrong with these plans it was that they demanded too much of the young man. He asked: "Are you simply trying to make a good all-around-logger of the boy or would you rather have a highly trained mind to develop a manager and a high class engineer?" It seemed to him that it would be on a broader, higher and more beneficial plane if it skipped some of the hard details of the work.

After offering this short criticism, Mr. Donovan called on Dr. Schenck.

Dr. Schenck mounted the platform, suitcase in hand, and remarked that he had come to stay and that like a good logger he had brought his bedding with him. Mr. Schenck said in part:

I think the best way to teach any fellow logging engineering would be to bring him as often as possible to the Pacific Logging Congress. The greatest advantage in this to the youngsters would be the opportunity of meeting the biggest and best men in the business. Ninety percent of success lies in the knowledge of men.

Unfortunately the logging congress did not exist when I discovered America eighteen and a half years ago. I came over here from Germany with no money, but a large amount of forestry knowledge. George Vanderbilt wanted a foreign forester so he brought me over and put me on 125,000 acres of so-called timberland, but there was no stumpage on it—at least there wasn't three thousand feet to the acre. The worst of it was I didn't have any knowledge of logging or lumbering. They made me president of the Biltmore Lumber Company, with a band mill to operate and I had never seen a band mill. The question was how should I get the knowledge. I started out by writing a book on logging engineering. Where is Mr. O'Hearne who said there is no text book on logging engineering? I dedicate this book to him. (Here Mr. Schenck produced one of his books from his suit case and tossed it to Mr. O'Hearne and also one to George Weisel.) I got the AMERICAN LUMBERMAN and other periodicals and read them all and I went around to see how the other fellows were logging. I couldn't learn from the moonshiners up there in the hills of North Carolina. Finally I started to log and I built a splash dam. It wasn't very successful. I estimated that it would cost $1,000 but it cost $9,000. I had to wait nine months for a freshet, but I finally got down about three million feet of logs. Later I found that in such scattering timber it was much more economical to use portable mills and transport the mills to the timber instead of the timber to the mills. I managed to make this system pay.

To get back to the subject—how to teach logging engineering—I have tried to do just that for fifteen years. Biltmore is the smallest forestry school in the country and it has no endowment, but it has something more important—the support of lumbermen. I am known in the East, but not very well known in the West. I am sorry that Columbus and I did not discover America on the west side. Logging engineering is only a part of all forestry work. German foresters are not what you think—all tree planters—but are mostly loggers and lumbermen. I invite everyone of you that has $350 to go back with me to Germany in January and February and see what German foresters are doing. Their methods are all right for them but would be folly in the western part of this country today. They would not pay at all. Now I want to define forestry for you.

Forestry is anything that has to do with goods. It is mainly logging and lumbering. In the United States forestry is divided and subdivided. Public forestry is only about 4 percent of the whole. Of private forestry, probably financing is about 10 percent, fire protection about 1 percent, etc., but logging and lumbering are about 84 percent. Now if logging and lumbering are about 84 percent of forestry, why don't our forestry schools teach logging and lumbering? One reason is there are no teachers—question—how will we teach logging engineering teachers? Where shall we teach logging engineering? The answer is—Where we meet the hardest problems. The best teacher is he who does things in the woods and shows how it is done. What shall we teach? I do not believe in foreign languages—except German. I believe in teaching them the practical things about logging. I do not believe in teaching them physics. I passed with highest honors in physics under a famous professor, but what I know about physics would not fill a book.

I believe that the six-year course as proposed is too long for the good red blooded boy to wait. He wants to get to work sooner and the prospect of going to school for six years is discouraging. Neither do I believe in teaching these boys all of the little details of hard work about a logging camp. You can not make them blacksmiths and everything else. The brain is limited to a space about 5 by 5 by 3 inches—and some have less. The right boys can get a sufficient course in less than six years. Now we want to get the right material to work on. How will we manage that? By eliminating the weaklings from the course. This is done by giving them a lot of hard work to do. I recently left my boys at Marshfield with Al Powers and told them to make good. Some of them have been eliminated. I started my boys out last spring in the Adirondacks and took them to the southern pineries, then up to Michigan. Now they are out in Oregon. Later they will go to California, Washington and British Columbia.

Dr. Schenck's address made a big hit and as Mr. Donovan said was a treat for everyone present, and he took occasion to thank Dr. Schenck.

The other speakers who were to discuss this subject were asked to limit their remarks to five minutes each.

Professor Clothier, of Pullman College, Washington, came to the defense of Mr. O'Hearne's paper and differed somewhat from Dr. Schenck. He said:

Both have about the same idea, but express it much different. O'Hearne would divide the time between the college and the woods, but Dr. Schenck, being a whole college in himself, can take the college to the woods with him.

Professor Clothier was in favor of the six-year term for logging engineers. He believed that the six-year term was not too long, especially with half of the time divided between the class and the field. He said the equipment of a good engineering college is necessary to make a good logging engineer.

J. P. VanOrsdel, logging superintendent of the Portland Lumber Company, Portland, Ore., who has given the subject much thought, said that he thought six years too long to expect a young man who wants to get into the game to wait. He said the real logger will go into it for the love of it, and the way to pick the material is to start the boy out some spring to get a job in the woods on his own hook. After he has tried it he will probably go in for literature, but if he still wants to go in for it he will make good material for a logging engineer.

Mr. Donovan then called on the "Hon. Mr. Young, commonly known as Jim." He is logging superintendent of the Inman-Poulson Lumber Company.

Mr. Young said that he tackled the subject with reluctance. He knew something about logging but not anything about teaching logging engineering. His advice was not to educate them so much they will be unable to make a living. He said he had had forestry school graduates that could not lay out a cow path. Mr. Young's idea was that they should be especially taught the more practical things.

The Chair said: "I will now call one of the college men to the bat and let them have an inning." He then introduced Prof. J. E. Kirkwood, Missoula, Mont., who read a paper entitled "How Shall We Teach Logging Engineering?"

THE TEACHER'S STANDPOINT.

By Prof. J. E. Kirkwood, of Missoula, Mont.—Teaching the Young Idea How to Shoot.

In discussing the topic, "How Shall We Teach Logging Engineering?" following the able paper of Mr. O'Hearne, I am more than ever impressed with the magnitude of the subject. From the background of boyhood years in the forests of western Oregon, from experience as a young man in the logging camps on the Columbia River, and later as a student and teacher of forestry, I have long been convinced that the whole scope of lumbering operations should and soon will occupy a very large place in engineering science. Being a school man, I presume I am expected to discuss the subject from the standpoint of the teacher.

The whole purpose of the training of the logging engineer may be summed up in a word, viz.: that the largest possible returns may be realized upon an investment in timber or timberlands from the standpoint of the operating lumberman. To the realization of this purpose three conditions would seem to be essential:

1. To estimate accurately the minimum cost of the operations.
2. To reduce the cost of production.
3. To meet the silvicultural requirements of the stand.

The first requirement, that of accurate estimates, would involve an extensive knowledge and training in the numerous operations, the cost of which must be determined in any logging job, i. e., the cost and efficiency of the various classes of labor, the construction of roads under all sorts of conditions, the cost and efficiency of all kinds of logging machinery, the size of cable to be employed under given conditions, the proper weight of steel rails, the fuels to be used, the location and construction of camps, transportation of supplies and of the product; these and many other things the engineer must be able to compute.

To reduce the cost in logging as in any other business, after the selection of the right outfit, is, I take it, a problem involving the principles of organization and efficiency. To handle a crew of men so that they will not tread upon one another's heels, and interfere in the discharge of their duties, to inspire good will and energy to provide everything that is advantageous in the matter of food, lodging and recreation in the camps; all these in their proper relation must be determined, and it would seem that the wisdom shown by the management in these matters would be the real source of profits. True it is that success in such affairs is largely a matter of personality and common sense on the part of the operator, qualities which can not be imparted by the schools, yet knowledge and experience go a long way toward supplying what might otherwise be lacking, and the impression among men that their leader "knows his business" always is essential to his influence among them. Such knowledge and experience must be acquired by systematic effort directed thereto.

To meet the silvicultural requirements of the stand is of course essential from the standpoint of a permanent investment. To an operator who merely purchases the stumpage upon a tract of land, such a consideration may have no appeal, but to the company which looks to its timberlands for a sustained yield they are of paramount importance. Under this requirement we have the application of practical forestry, involving a thorough knowledge of timber and the requirement of important species. Ability to judge the soil capacity, the rate of natural reproduction, the rate of increment under given conditions, the cost and methods of artificial reproduction, the value of the stand as it may now or in the future be affected by disease, these and many other problems require an advanced knowledge of natural science and especially of forest botany. That the volume of a forest stand may ultimately be increased by proper manipulation up to 50 or 100 percent, or even more, of its present quantity is itself worth consideration. Or to look at the matter from another angle, if ignorance of silvicultural principles on the part of the operator needlessly reduces or eliminates the possibility of the future use of the land for the purpose of timber production an irreparable loss is sustained not only by the owners but by the community and the country at large. Hence, the direct relation of forest botany to logging engineering.

Scope of Subjects.

One has but to glance at the program of the present meetings in order to gain some idea of the scope of subjects which the education of the logging engineer should embrace. His training must be far more extensive than that of the civil, mechanical or electrical engineer, for he must have a working knowledge of all these subjects. In view of these facts, I should urge a full high school course as the only adequate basis upon which to develop the greatest efficiency, and would agree with Mr. O'Hearne that fully six years should be required in college and in field work. As to the distribution of field and classroom work I know of no better arrangement than that which he has suggested.

In my opinion the course of study might be outlined briefly as follows, and falls naturally into three groups:

1. The cultural and foundation subjects coming principally in the high school, viz., English and modern language, American history, economics, physics, chemistry, geology and biology, mathematics, business methods, etc. These subjects as a foundation for the later studies, and as part of the life equipment of every man, enhancing the dignity of his calling and increasing his influence in the community.

2. Engineering subjects: Civil engineering—Areas, topography, roads, construction, etc. Mechanical engineering—Machinery and devices, power, fuels, etc. Electrical engineering—Generators, motors, wiring, telephones, lights, etc. Descriptive lumbering. Shop work and drafting.

3. Silvical subjects: Identification of trees. Local distribution, growth, and reproduction as related to soil, moisture, climate, etc. Methods of reproducing a stand. Recognition of fungi and other deteriorating agencies. Determination of the rotation period, etc.

Outline of College Course in Logging Engineering.

FIRST YEAR.

Field—Common Labor About Camps.

First Term.		Second Term.	
Math. (algebra and trig.)	5	Math., anal., geom. and calc.)	5
Physics	5	Physics	5
Elementary botany	3	Elementary botany	3
Drafting	2	Drafting	2

SECOND YEAR.

Field—Swamping, Barking, Bucking, Etc.

Mensuration	3	Mensuration	3
Surveying (compass and chain)	2	Surveying (transit and level)	2
Mechanics	5	Applied mechanics	5
Chemistry	3	Chemistry	3
Shop (wood work)	2	Shop (forge and foundry)	2

THIRD YEAR.

Field—Felling, Scaling, Accounting, Etc.

Surveying (topography)	2	Surveying (railroads)	2
Forest botany (classific)	5	Forest Botany (ecology)	5
Descriptive lumbering	3	Descriptive lumbering	3
Fire protection	2	Construction dams, booms, rafts, etc.	2
Geology	3	Mineralogy	3

FOURTH YEAR.

Field—Compass, Levels, Etc.

Silviculture	5	Silviculture	5
Road survey and location	3	Railroad survey and location	3
Road construction problems	2	Railroad construction problems	2
Materials of construction	3	Materials of construction	3
Design of flumes and chutes	2	Construction of flumes and chutes	2

FIFTH YEAR.

Field—Road, Location, Etc.

Bridge design	5	Bridge construction	5
Steam engines	4	Logging engines	4
Electricity	4	Electricity	4
Camp construct. and org	3	Forest propogation	2
Forest Entomology	2	Forest pathology (fungi)	3

SIXTH YEAR.

Field—Estimates on Certain Tract, Full Working Plans.

Forest management and finance	2	Forest management and finance	2
Yarding	5	Transportation	5
Electrical machinery	3	Electrical machinery	3
Thesis	8	Thesis	8

Following Professor Kirkwood, Dr. C. H. Shattuck, of the University of Idaho, Moscow, Idaho, gave his views on this the subject generally conceded to be the most important coming before the congress. Professor Shattuck paid his compliments to Dr. Schenck and said that his ideas were the outgrowth of those imparted to him by that worthy teacher of forestry. His paper was entitled "What Shall We Teach in Logging Engineering?"

TEACHING LOGGING ENGINEERING.

By Prof. C. H. Shattuck, of Idaho University, Moscow, Idaho—A Many-Sided Problem.

Logging engineering is not new either in theory or practice, but heretofore the road to proficiency in this line has been long and rough and strewn with risks, loss and disaster. Here and there a man with more than usual ability to adapt himself to the peculiar conditions under which such an engineer must labor is found who may be said to be successful.

But it can truly be said that not one out of fifty undertaking this line of work has made a success of it. Just now there is an urgent call for men so trained that we may have a larger number of successful engineers in our logging camps. Now how shall we train these men? How, what and where are they to be taught?

How Are They to Be Taught?

How are we to instruct the young men who would become logging engineers? Shall we employ the lecture method, the text book method, or the laboratory and field method, or a combination of two or more of these methods? While it is true that the text books in logging engineering are very few, there are many excellent texts dealing with practically all the subjects which we would include in a course in logging engineering; and these should by all means be used.

Why bar the excellent texts on biology, physics, mathematics and engineering subjects which are so fully used in training engineers in other lines? I would therefore suggest that we employ text books freely and that a very carefully prepared course of collateral reading be assigned. A fair share of this assignment should be in our engineering and trade journals as well as machinery catalogs, manuals, etc.

The lectures given should be carefully planned to supplement this reading, as well as bearing directly upon the laboratory and field work, which should not be less carefully planned and given in conjunction with the two courses mentioned above.

What Should Our Logging Engineers Be Taught

Here, of course, the "doctors disagree." We have many colleges and universities where various kinds of engineers are prepared, and we instinctively turn to the curricula of these institution to see what they are prescribing for engineering students. We are at once impressed with the similarity of subjects taught in all the better-grade institutions granting engineering degrees.

[Here outline courses in engineering were introduced in the form of charts.]

If all our colleges and universities, many of which have been turning out high-grade and thoroughly-trained engineers for many years, consider these subjects fundamental and have employed them in the training of engineers of all kinds, should we not consider them also in preparing a logging engineer?

The logging engineer is no less an engineer than the mechanical, electrical or civil engineer. In fact, he must be just as thoroughly grounded in the fundamental principles of engineering as any of these. He must receive therefore the same training in those subjects, which it must be admitted are essential in laying the foundation for a course in any line of engineering that other engineers receive.

In addition to these he must receive such a training in forestry subjects and ways of the woods as is necessary to give him the forester's viewpoint in planning all his engineering operations. It may be difficult to make this point clear, yet the fact remains that engineers of ability but not having this viewpoint have been tried as logging engineers repeatedly with indifferent success. A knowledge of the industry is very essential to any man planning larger operations in that industry, and he who ventures so to plan without this knowledge is sure to make many and grave mistakes. The logging engineer should know timber and lumbering and the ways of the woods, in life, death, and destruction and regeneration; he must know species, and stands with their yields, and have a good knowledge of forest utilization and management; above all he must know men and especially men of the woods, for they are a tribe unto themselves. In other words, he must have a practical knowledge of forestry as well as engineering before he can be a good all-round logging engineer.

Where Shall We Train the Logging Engineer?

In answering this question we will also do well to observe the methods used in other engineering courses where it has been found necessary to shift the student to the proper environment from time to time as occasion demands. We must take our students to the proper environment. One course will demand that part of the students' time be spent in the laboratory, part in the woods, and part in the lecture room. Another course may be given to better advantage in one or more of those places, to the exclusion of others. Throughout every course the student should be brought in contact with the practical problems covered by that course to such an extent that he may always have clearly in mind why he should take the course and understand its application to, and place in, logging engineering.

Practice and demonstration in the laboratory and field are indispensable if the student would acquire skill and judgment in his line as well as be able to assimilate the condensed information contained in the text books and lectures.

This is a very important point, and overlooking it has been the cause of more superficial engineers than any other. We must learn by doing, is an adage familiar to all. A corollary to this is: That doing makes learning by reading and study much easier.

The great value of field and laboratory practice is that it greatly simplifies our texts and prepares the student to understand and appreciate lectures as well as acquire information for himself and confidence in himself. He must spend a large part of his time in the woods where the work is done.

What Shall Be the Length of the Course?

This question is a very important one. It must be considered from several angles. The tendency on the part of lumbermen generally seems to be to make this a long course; their aim is to acquire thoroughness, and nothing better can be desired. They are entirely in the right in desiring that the men remain in school until they are as completely equipped as possible, and no one desires to find fault with or criticise this. Yet we who would train logging engineers must look at this question from another direction as well. The great majority of engineering courses embrace but four years. This is a significant fact which the young man considering what line of engineering he will take is not apt to overlook. We must show him in no uncertain way that there are pecuniary advantages in taking a longer engineering course, or he simply will not do it. This is especially true in the Northwest, where the demand for trained men is large and the supply limited. These men will not elect logging engineering simply for the love of the work. I have found very few missionaries among engineers. They generally, like most of the rest of us, are on the lookout for the best paying job they can find and generally want to get into it just as soon as possible. Now, if we ask them to take a five- or six-year course to qualify as logging engineers the salary must be such as to justify them in making the sacrifice in time and money which the longer course requires. Can we satisfy them that such will be the case? If we can not most of them will elect some other branch of engineering and few, if any, will register for the course in logging engineering if it is longer than four years.

At the present ime we are not able to say what the salary of our logging engineer will be, or how he will rank in this respect with other engineers, but we have a right to assume that the salary will not be very high to start with. Are we justified in assuring the young man that there will be enough difference between his salary and that of other engineers to compensate him for the extra two years spent in preparation? This is a serious question for those of us who teach, and likewise one of intense interest to those who would become logging engineers. Yet, since no logging engineers have gone out from the schools, we can not answer the question. Can the employer do so? If he can tell us what a reasonably good logging engineer is likely to receive it will help us who teach to shape our courses properly and will also enable us to induce students to enroll in these courses. At the present time, as Mr. O'Hearn has well said, the pecuniary advantages held out seem to be insufficient to justify students in expending the time and money and, as one aptly put it, taking the punishment which a five- or six-year course involves.

I am inclined to favor a four-year undergraduate course in logging engineering as in other engineering courses, adding as the vocation seems in the future to justify one or more years of post-graduate work which the four-year graduate could come back and take after having had a few years' actual practice in the field.

Such a course, while it may not contain all that might be studied to advantage, contains the fundamentals found in all engineering courses and therefore necessary in training all engineers, and like other engineering courses contains the essentials peculiar to that particular line of engineering, which in this case would be made up largely of forestry subjects.

Chairman Donovan in introducing Prof. George W. Peavy, of the Oregon Agricultural College, who has charge of the forestry department at the college, said: "No better use of a million dollars could have been made by Oregon than to invest it in teaching logging engineering. It has far more timber than any other State in the Union, but does not cut nearly as much as Washington. It has the greatest future in lumbering before it and should wake up to its need for operators."

Professor Peavy said of teaching logging engineering:

It is a local proposition. The boy who starts in to take a course in logging engineering surely has an idea whether he is going to operate on the Pacific coast or not. We could not afford to take him all over the United States and take up each particular problem. There are other things you want your sons to know if they are the ones who are going to take this course besides details of logging. Your sons should have just as broad an education as other boys and I think the course should be at least five years in length. The first two years, nine months should be spent in college and three in the woods and the next three years the time could be equally divided between the woods and the class rooms. During this time while working in the woods the boy could be earning a salary, which in many cases is necessary to help him defray the expenses of his course. The timber owners of the State pay at least half of the taxes. Now while they are contributing half of the maintainance of the colleges they get nothing in the way of training logging engineers. They must have the sinews of war in this instance and they must go to the legislature to get it.

Prof. Hugo Winkenwerder, of the University of Washington, Seattle, told of the work of the University of Washington Forestry School and his ideas of establishing a chair of logging engineering on a larger scale. He said the University of Washington has been wrestling with the idea of giving such a course, and he finds that everyone has a different idea. He said a course of logging engineering can come only as a development. The University of Washington has changed its course every year since it started. Some of its men who have gone out are making good and this gives encouragement and makes it feel it is on the right track. He said there ought to be a good deal of field work, but that it would be well to dispense with much of the primary field work. A man does not have to know all about firing a donkey engine to be able to tell when he has a good fireman. He objected to six months a year field work, thinking it too much, and suggested three and a half months during the summer and one day a week during school work.

Mr. Donovan paid a high tribute to the work of the university men and then asked Mr. O'Hearne to close the discussion of his own paper, thus giving him an opportunity to defend it against any criticisms.

Mr. O'Hearne sidestepped the issue but told the congress what a logging engineer is in the following laugh-producing lines:

Logging engineers were discovered and named by G. M. Cornwall about the year 1909 A. D. They are a semi-civilized race living on mountainous tree covered country. At one time they were considered a menace to the Government, especially of the forestry department but, as in many other instances, a closer study of their habits has brought out the fact that they are almost harmless and probably are useful to mankind. The Government is continuing its investigations and it is supposed will soon issue a pamphlet giving their full genealogical history and their economic place in civilization. At the present time the States and districts in which they are situated are taking steps towards having chairs established in the universities to prevent their extermination.

Physically they are active, healthy, and gaunt. Their lower extremities are especially well developed, supposed to be the result of climbing up and down hills and springing from windfall to windfall. They have great powers of endurance and are resourceful to a marked degree. Have been known to exist for indefinite periods on bacon, beans, flapjacks and nicotine.

Their chief pastimes—they do not seem to have any regular work—are cruising, planning for the removal of timber, and quarreling with the timber owners as to the best methods of operating camps. In cruising they estimate the amount of timber on any tract, giving the different species and the grades of each specie. This gives their guessing faculties great exercise and some of them have developed to be wonderfully good guessers. They also, by means of a few hieroglyphics, give a description of the nature of the land on which the timber is situated, showing where rocks, creeks, and slopes are and the steepness of the slopes. These charts are interesting to those who have studied their language or have an interpreter.

In planning for the removal of timber, he decides on the best of the standard types of logging, skidroad, railroad, or cableway to use; or he may decide on a combination of any two or probably the three of them. Then again it may be that a special system will have to be devised to suit some particular case. He knows the type and size of engines, both donkey and locomotive, that will handle the product most economically; knows the best place for the railroad to run—the best place for three reasons; studying the timber at the most convenient point for yarding and trading, making it easy and safe to handle the cars when loaded, and cheapness of construction—this last appeals especially to the owner. He knows enough physiology to bind up a smashed toe but not always enough to come in out of the rain; enough botany to distinguish a fir tree from fireweed; and enough geology to tell hardpan from peat.

At some time in his life he has been forced to do nearly every kind of work in the world. This was not on account of any inclination on his part to work but stern necessity commanded it and, like many of the so-called ills of life, this was of great benefit to him. He learned the use of toois and rigging, got a general idea of machinery, found what constitutes a fair day's work, and has the advantage of having the viewpoint of the workman. They are showing some signs of further development, widened by the fact that of late years he is requiring a little knowledge of gasoline and electricity.

Temperamentally, he is an optimist, never giving up because some of his plans fail. He seems to realize that there is some way out of every difficulty and is persistent enough to keep trying till he finds it.

Artistically, he is inclined towards painting, of which he sometimes becomes a past master. He has been known to paint a whole town red in one night.

Morally, like most primitive people, he has not learned the methods of deceit, and does not thrive well when subjected to the demands of higher civilization.

This address was not on the program, but it made a big hit.

At this time the Chair announced a recess of fifteen minutes, after which, H. D. Langille, president of the Tree Faller & Cutter Company, Portland, Ore., delivered a very interesting address on "The Value of the Tree Faller."

VALUE OF THE TREE FALLER.

By H. D. Langille, of Portland, Ore.—The Difference Between Success and Failure.

Efficiency is the greatest requirement of our complex, modern industrial life. It is sought for by the foremost men in every vocation; it spells the difference between success and failure; it enables one man to climb the grade while another exhausts himself at the foot of the hill; it makes the difference between men and their accomplishments; it is what most of us generally term luck. In a narrower sense it means a minimum of expenditure and a maximum of production. The expenditure may be in dollars of cost or brains or strength or raw material going into the effort to produce; but who is there among us today who can say that in his business the last work in efficiency has been written. Certainly none engaged in logging can say it. You who are loggers know this or you would not be here; you see the need for new ideas or you would not be here. Among you there are men who have done things that make for greater efficiency and more will be done by you as the need becomes pressing. It is indeed a long step from the ways of the old ox teams to the modern logging camp and I may safely predict that the future will bring changes no less extraordinary as you meet new conditions in doing old things.

Efficiency has been the guiding star of the wise men who have brought together this congress. They have seen the need for such coming together, for an exchange of the ideas you have developed and applied as each has met and overcome his own particular difficulties. And so these wise men have asked me to come and tell you of that which I have learned and which will aid you in spelling out the word I have taken for my text.

Three-fold Saving Effected.

I exhibit before you a device calculated to assist in converting trees into logs with a saving, first, of the physical strength and time of your men; second, of a larger part of the raw material representing your investment; and third, cheaper delivery of logs from stump to car.

This device is known as a "tree faller" or "jack." Its purpose is to enable timber fallers to throw trees in any direction desired without regard for the angle or degree of the tree's "list" or lean."

It is not an experiment. Its practicability has been tested and proved under the most severe tests to which any reasonable men would subject it. Two tree fallers of the original design and material have been in use for several weeks in one of the camps on the lower Columbia, and even that inferior type has given complete satisfaction. The new design, of which I show the larger type, is much superior in every way. Its success and its value to those operating in large timber is assured.

Device Involves Lever Principle.

As you see, the device embodies only the simple old principles of arms working on a fulcrum and spread through the agency of a slow-moving screw operated with a hand lever. Its lifting power is enormous. I am unable to tell you how much in pounds because as yet we have not tested it scientifically with mechanical appliances, but we have tested it thoroughly in practical use. A few days ago I witnessed a test made with this faller. We selected a Douglas fir 5 feet in diameter and 260 feet in height from the ground. This tree stood on the point of a ridge and it leaned down the hill 23 feet 9 inches by actual measurement with a transit. The experienced fallers who cut it agreed that not more than three logs could have been saved had it been necessary to cut the tree in the usual way. We lifted this enormous weight against its lean and felled it in exactly the opposite direction along the crest of the ridge, saving, without a break, seven 32-foot logs, or 224 feet of merchantable length, or all there was in the tree. The top broke at 10-inch diameter. Assuming that the three butt logs could have been saved under the old

method of cutting, the saving in log value from this one tree alone by the use of the jack was $45 at the present low price of logs.

At another camp a magnificent spruce containing 20,000 feet of logs was left by the loggers because had it been felled across the deep narrow gulch over which it leaned, its destruction would have been complete and there would have been nothing but additional litter on the ground. With one of these jacks the tree was lifted against its lean and laid up the hill without a break under 200 feet from the stump. These are merely examples of what has been done. The lifting power of the device is limited only by the compression strength of wood, hence anything not outside the bounds of reason can be accomplished by using two jacks in order to secure a greater compression surface.

Adapted to All Sizes of Timber.

The weight of this form, complete, is 122 pounds. The jaw opens 7 inches, hence the jack is capable of throwing trees of almost any size. This type is adapted to use in the heaviest Douglas fir, spruce and redwood forests where, by using two jacks, trees of any size may be thrown in any desired direction. We now propose to make a lighter form for general use in smaller timber. This will weigh about 80 pounds complete and possess the same strength as this form, but it will not have the same spread. Later on we may design a still lighter type for use in place of wedges in ordinary timber felling. The device is made of the best grades of steel by the drop-forge process, instead of by casting.

Increases Efficiency of Falling Crews.

It will be easily seen that not all of the value of this device lies in saving timber, although this feature alone demands its use. The efficiency of falling crews is greatly increased. Instead of spending hours in almost fruitless, exhausting effort to throw trees with wedges, the saw is kept free at all times, thereby increasing the capacity of a crew 35 percent, according to experienced fallers who have used the device. Nor is this all. Every logger who has worked in big timber knows not only the enormous loss of good values through breakage, but also of the added cost of yarding where the ground is strewn with broken logs and debris. With every tree taken out in its entirety, the work of the book tender is made easier and consequently the efficiency of the entire donkey crew is increased.

These are the prime merits possessed by this device. You will discover others if you put it into use. It is one of the greatest factors in true conservation ever added to the equipment of logging camps. It means the saving of billions of feet of timber in this western country of big trees; it means the saving of hundreds of thousands of horse power in human strength; it means easier work and therefore greater contentment among those who toil in the woods; it means greater yields of timber a day and acre and therefore greater profits to the operator; it means a "minimum of expenditure and a maximum of production"—which is efficiency. More than these can not be asked of one simple device.

Mr. Donovan jocularly asked the secretary to keep order while he delivered his address on "Modern Camp Buildings." He prefaced his address by explaining with a chart the rooms in the bunk house differing from ordinary camps. This address follows:

MODERN CAMP BUILDINGS.

Evolution From Woodmen's Insanitary Homes Described by J. J. Donovan, of Bellingham, Wash.

Each camp and timber tract is a problem for the owners which may be solved in various ways. It is not always clear which plan is best, but cheap and insanitary camps may not mean eventual low cost per thousand of timber handled.

The big, dark, crowded bunk house has gone by, even for temporary camps, and in its place we have small units, portable or on wheels, where the men have more privacy more comfort and may form more congenial groups. Where the large temporary bunk houses are still built they are greatly improved over those of past years. The logger at most camps has little ground for complaint as to food, shelter or pay now that the donkeys, locomotives and "flying-machines" have replaced the bull and horse teams of twenty years ago.

Difficulty of obtaining building material and the necessity for placing camps within walking distance of the work account for the character of many of the temporary camps which have furnished texts of sensational complaints written for cash by gentlemen more accustomed to the luxury of city hotels than the rough life of the woods.

The camp of our company at Alger in Skagit County is the result of a combination of circumstances which warranted somewhat better construction than is usual. After fourteen years of operations involving the building of seven temporary camps of various types, we had cut all outlying timber. Our holdings, aggregating 1,000,000,000 feet, were all within six miles, and half within three miles, of Alger, where our logging railway crosses the Great Northern branch which we operate under lease.

Modern Bunk-House Constructed.

With a dismantled mill, old store and office as a nucleus, we built, early in 1912, a new bunk-house which accommodates 100 men, repaired and renovated quarters for 50 more, transformed the old mill into a dining-room seating 150 with suitable kitchen and store-rooms and recreation room up-stairs, built a machine shop 80 by 100 of common boards on heavy frame, oil-station, water-tank, sand-house and a number of small auxiliary buildings.

All are lighted by electricity, the bunk-house and dining-room heated by steam and supplied with hot water from the machine-shop 300 feet away, where we make all necessary repairs on our fifteen donkey engines, four locomotives and sixty cars. Our railroad yard is arranged with Y passing and spur tracks at this point so supplies may be delivered and trains made up with the minimum of labor.

We expect Alger to be our supply and repair headquarters indefinitely and for two or three logging sidings as long as we can reach the working front in the woods within 15 minutes by rail. This means approximately a 4-mile radius. After that distance is passed light, outlying camps will be used. Because of the permanence of the repair part of the camp our machine-shop was made 80 feet wide and 100 feet long, strong, simple construction with double tracks and pits in the center. One side is used entirely for the storage of wooden car-sills and repair parts and for woodworking. The other side is the machine-shop proper. An oil burning, 54-inch by 15-foot boiler furnishes light, heat and power for the shop and camp. It uses from 16 to 24 gallons of fuel an hour, depending on the work. A 7 by 12 Atlas engine drives the shafting and a General Electric 20 kilowatt dynamo.

In the shop are two forges, a No. 5 Beaudry power hammer which with one blacksmith and helper do all the work for the railroad and three sides, a 12-foot New Haven lathe, 26-inch swing, a shaper, a 26-inch Barnes drill, a Williams No. 1 pipe and bolt cutter, a 75-ton hydraulic press, power grinders and saws enable a small force to keep our equipment in repair at a minimum cost.

The dining-room and recreation-room overhead are capable of caring for 150 men. The recreation room has books, papers, card-tables, two pool-tables, a barber's chair, bath-rooms and lavatory. This is open to all, but for use of baths and pool-tables a small charge is made by our lessee. He sells soft drinks, cigars and tobacco. No gambling, nor sale of beer or liquor are permitted.

Description of Bunkhouse.

Our bunk-house has created more discussion than any other feature of the camp and is perhaps worthy of some description. It was designed to be cleanly, comfortable and sanitary. It is heated with steam, electric lighted and has hot and cold water where fourteen men may wash at one time in the lavatory at the rear where are also modern toilets draining to a septic tank 500 feet away.

There are eight rooms accommodating eight men each, two of four, and the upper floor, where there are accommodations for thirty. The eight-men rooms are 15 by 26 with a light partition crossing midway, but with 3½-foot center opening. This gives each man a corner of his own with shelf and locker.

Two large windows hung on pulleys insure ventilation. There are a small table and electric light for each four men.

Steel "Tiger" bunks 3½ by 6½ feet are provided for each man, also a plain mattress. The men still carry their blankets and having provided these quarters, each man looks after his own belongings. The company sees that every room is swept daily. The hard-finish plaster and steel bunks have reduced the danger from vermin, which often infest otherwise good sleeping-quarters, to a minimum.

Twelve by 36-foot porches in front of both first and second stories are much used by the men in good weather.

A good water supply was obtained by laying a wooden pipe line, partly 5- and partly 4-inch, up Silver Creek, one mile, at a cost of $1,500.

The bunk-house cost $5,000, the steel bunks $675, and the total cost of the camp, old buildings renovated, new ones constructed, water and electric supply, bunks and other furniture, was $15,427.05. This does not include any track work, nor the machinery at the shop.

Provision for Families.

Having arranged for economical repairs of our equipment and the decent shelter and feeding of our men who live in camp, we undertook to make some provision for families.

Alger is fourteen miles south of Bellingham on the main road between that city and Seattle. This road passed about 1,000 feet east of camp and has had a good schoolhouse and some families for a number of years.

We removed the stumps and cleared up ten acres along the road, and offered lots 50 by 130 at practically cost to any who desired homes of their own. We also offered acre lots, uncleared, abutting on the road, and logged-off lands near by in tracts to suit, all on long time and easy terms. We also furnished lumber from our mill to those desiring to build. We built four modern cottages on large lots for rent to our principal employees. No attempt was made to "boom" this village and speculation was discouraged. It has school, church, postoffice, hotel, restaurant, two stores, daily stage, weekly train for freight and at turkey-distribution last Christmas forty-six head of families showed up at the office.

Some of our friends have smiled at our expenditure as being too large for the object attained. We have plastered some buildings where boards might have served, but there has been no complaint of lice. We have spent a few hundred dollars for paint and whitewash on buildings that we expect to use for many years. When the I. W. W. called out men in June, seriously crippling many camps, not one of our 213 men quit and during the last year our men have been more steady than ever before.

This camp is the natural village point for at least twenty square miles of logged-off land and while we may, after a few years, ask most of the woodsmen to go into temporary camps, this headquarters is justified from both economic and sentimental standpoints.

The photographs and plans will give those interested some idea of details.

Good machinery is important in all woods operations, but even more vital is a force of sober, efficient, contented men.

Secretary Cornwall rang the bell calling time on Chairman Donovan just as he finished his paper.

B. R. Lewis, Seattle, Wash., of the Clear Lake Lumber Company, who was next on the program, was not present at this time and his address was postponed until the following day.

Boiler Comparisons.

In a comparison of the advantages of the vertical donkey boiler over the horizontal type, Fred McCurdy, of Hillsdale, Ore., said:

THE DONKEY BOILER IN USE.

Its Comparative Advantages Shown by Fred McCurdy, of Hillsdale, Ore.

In the last two or three years the question of burning our best logs obtained in the woods for fuel has started us all to thinking, and the results are that some of our larger operators have tried fuel oil, which has proved very successful and economical, as well as eliminating the fire hazard. Like all experiments, we find where we gain results in one way we have trouble, in another, which must be overcome; and has been proved in this case with the type of boiler now in use, where oil is being used for fuel.

Not altogether have I considered the horizontal type of boiler adapted to fuel oil alone; but believe it would give the fullest efficiency obtainable, as the conditions may require—either for wood or coal fuel, allowing the advantages and use of improvements like other steam plants—which I will bring to your notice later on.

I believe the locomotive type of boiler must eventually prevail in woods use, for the following reasons:

1. Submerged tubes are practicable. It would not be feasible to attempt to secure the submerged tube design in the vertical boiler, for the reason that it would necessitate the building of an extra dome or receptacle in which to carry the dry steam. This type of construction would more or less obstruct the draft and thereby defeat its purpose.

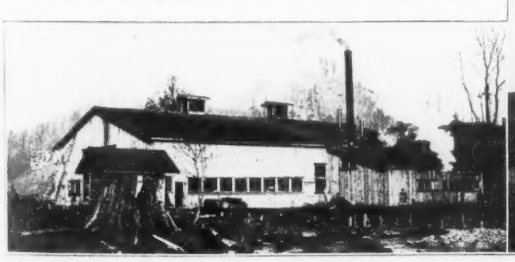
Enclosed Steam Pipes.

It is my judgment that the logging engine manufacturers in the near future will realize the advantages of locating their steam pipes inside the shell of the boiler. By making these changes in construction it will give the same results as are now obtained in locomotives by supplying dry steam to the cylinders. The cost of making this change would not be very much greater than in the present type.

In case of an accident necessitating the removing of these pipes, provision could be made in the construction of the boiler so they could be removed without involving a great deal of labor. In my judgment, however, the chances of accident occurring to the enclosed pipes would be very much less than that of the exposed pipes.

At the present time in order to overcome the vibration we have to use a universal joint which, at best, must in the very nature of its construction give more or less trouble.

I believe when you come to figure this matter out you will find that the difference in the efficiency of the dry



MACHINE SHOP.

BUNK HOUSE.

COTTAGES.

VIEWS OF BLOEDEL DONOVAN LUMBER MILL'S CAMP AT ALGER, WASH., AND TOWN ADJACENT WHERE MARRIED EMPLOYEES RESIDE.

steam delivered directly to the cylinders instead of being subjected to exposure entailing condensation—especially in cold weather—will insure a considerably higher efficiency than is now possible with the present system of installation. Reduction in fuel costs and labor would at once become apparent, as the steam would be able to render its maximum efficiency.

There would be eliminated to a very large extent the contraction and expansion that necessarily must take place where the tubes and top sheet are subjected to such an intense heat as to cause a disintegration of the molecules of the steel, increasing the possibilities for collapse or bulging of the tubes and upper sheet.

2. The locomotive type permits a better application of the use of oil as fuel, as it provides a greater radius of heating surface and also the form of the boiler makes instalation easier.

3. The chances for eliminating the fire hazard are also to be considered in the use of the horizontal boiler, as the sparks are not so liable to be exhausted through the stack to the same degree, on account of the reduced upward draft.

I would like to draw your attention to the fact that if this type of boiler was being used for wood or coal fuel, in connection with a baffle plate now commonly used in locomotives, a screen could be installed in the smoke box, which would doubly insure any escaping sparks or cinders, through the spark arrester now used on the vertical type. Will also mention that a hole or opening could be cut in the bottom of the smoke box and by making a connection with a sheet iron pipe, 5 or 6 inches in diameter, to the ash pan; this would keep the smoke box clear of all accu-

FRED McCURDY, OF HILLSDALE, ORE.;
Who Told of Donkey Boilers.

mulating cinders which would go to the ash pan by natural draft.

4. In the locomotive type of boiler you can use a superheater, which will insure a saving in steam. This will mean, as stated before, a saving of fuel and labor and give better results and allow for the substitution of a feed pump for injectors. Injectors at best are not so reliable as a feed pump; and when you remember that you attain a degree of heat from 90° to 170° F. where a superheater is used the low-priced injector such as is in common use would be absolutely worthless.

5. The center of gravity in the horizontal type of boiler is very much lower than in the perpendicular. The boiler is more easily braced, and when it comes to movement, the chances for damage through toppling over are very much minimized

The argument might be advanced that the use of the horizontal boiler would necessarily increase the length of the frame of the engine. I do not think that this argument is conclusive, for this reason:

For the last two years I have been putting a 60-foot sled under any donkeys we have been operating. Mounted back of the boiler has been an oil tank carrying fourteen barrels of oil, and a water tank capable of providing us with about fifteen barrels of water. It would be my idea that in order to overcome the 5-foot additional space that would probably be necessary by the substitution of the horizontal for the vertical boiler, that we would construct a saddle tank on the boiler, in which one partition would carry water and the other the oil, thereby attaining the same compactness that is possible through the use of the present vertical type.

The benefit to be derived from mounting the oil tank on the horizontal boiler is the maintenance of an even temperature without the necessity of an additional heating apparatus.

Another advantage the horizontal boiler enjoys over the vertical type: You can not jacket the latter with asbestos without incurring to a more or less degree probable loss from pitting by reason of the water or steam getting between the shell of the boiler and the asbestos lining.

The accompanying drawing will assist to present more fully the advantages which would accrue from the use of the horizontal type of boiler. It would be my idea that in addition to the ordinary throttle now used, another throttle should be located in the steam dome similar to the practice now followed in locomotive building. The object of this emergency throttle is to insure absolute certainty in case of any accident to the operating throttle. At the present time an engineer on an ordinary logging donkey, if perchance, anything should get wrong with his throttle, must climb on top of the house, and reach the gate valves with considerable labor, to shut off the steam.

It will also be noted in connection with the proposed horizontal boiler that the hight from the base of the sled to the top of the smokestack is very much less than now encountered with the use of the vertical type. There would be a difference of about 5 feet in the hight of the boiler itself, and about 2 feet in the stack.

When you come to consider the number of movements a logging engine is required to make in a year, and the character of ground it must traverse, the factor of safety in favor of the horizontal over the vertical type is so great that this fact in itself is enough to commend it to every logging operator.

While the exhaust is used for superheating, it can also be carried to the smoke box to secure forced draft, where it can be regulated by a valve specially designed for that purpose. Some experiments along this line have been made with the vertical type of boiler, but without success, owing to its style of construction; therefore a blower has to be maintained, which necessitates the development of an additional amount of steam. On the other hand, with a horizontal type of boiler the blower can be used in conjunction with the exhaust, minimizing the amount of steam required to insure free combustion.

Steam shovel builders at one time used the vertical type of boiler, with a view of securing greater compactness, but after years of experience it was found that the horizontal type of boiler provided great steaming facilities, which overcame any supposed advantage of the vertical type, in so far as the economy of space was concerned. There was also manifest advantages both in safety of movement and operation. It was also found practicable to reduce the diameter of the boiler, by utilizing longer flues, thereby providing increased steam with lessened fuel cost.

Dr. Schenck at the conclusion of his address earlier in the afternoon had left his suitcase, filled with textbooks written by himself while he was attempting to master the game, on the platform. He now stated that the books were free for those that wanted them and the suitcase was donated with them.

The session adjourned at 5:30.

THE WELFARE DINNER.

The second annual welfare dinner under the auspices of the Young Men's Christian Association was held Thursday night, in the famous hall of the Doges, at Davenport's cafe. The first was held a year ago, in connection with the Pacific Logging Congress at Tacoma, and was such a success in creating an interest on the part of the loggers in the welfare work that the Y. M. C. A. is doing, and is desirous of doing, that it was made a permanent feature of the congress. There were 142 in attendance, including several ladies, and the talks, while brief, owing to the limited time, were earnest and sincere testimonials of the practical efficiency of the organization's work for the betterment of the social as well as moral condition of the men who work with their hands in the great forests of the western country.

A. W. Laird, general manager of the Potlatch Lumber Company, Potlatch, Idaho, a firm believer in the value of Christian welfare work, briefly introduced John R. Tolle, of Missoula, Mont., at the head of the lumber department of the Anaconda Copper Mining Company, as toastmaster, and the latter expressed his enjoyment at being able to participate in such an affair. Letters and telegrams of regret because of their absence were read from Ernest Lister, governor of Washington, who had been expected to make an address, and from Ralph Burnside, of the Sunset Timber Company, Raymond, Wash., who has a very satisfactory Y. M. C. A. club house at the company's camp at Firland.

Mr. Tolle stated that Frank H. Lusk, a neighbor of his at Missoula, and an old-time railroad man, had expected to be present, but could not attend, sending a letter instead. This letter was read by J. B. Rhodes. In it, Mr. Lusk, who some years ago scoffed at the establishment of Y. M. C. A. club houses at railroad construction camps, expressed his strong appreciation of the great benefits to men, and efficiency resulting from the Y. M. C. A. work. He declared it deserved the support of every intelligent employer of labor.

The toastmaster spoke very highly of the Y. M. C. A. industrial work in introducing J. A. Goodell, of Portland, Ore., industrial secretary of the organization in the Pacific Northwest, and Mr. Goodell, with the aid of stereopticon views, explained what is being done by his organization in the logging camps of the West. A year ago when the first welfare dinner was given there were two welfare club houses in the lumber and logging industry, while now there are fourteen, indicating a generous percentage of growth. Mr. Goodell referred to Col. Goethal's assertion that the success of the construction of the Panama Canal was due to the welfare and *esprit de corps* of the men.

Among the pictures shown were those of welfare club houses of the McCloud River Lumber Company, McCloud, Cal., C. A. Smith Lumber & Manufacturing Company, Marshfield, Ore., Puget Mill Company, Port Gamble, Wash., Blodel Donovan Lumber Mills, Alger, Wash., Consolidated Lumber Company, Elk, Wash., and the Vance Lumber Company, Malone, Wash. He also illustrated the Y. M. C. A. Building in large industrial centers, and also in railroad and other construction camps, the first of the latter at an irrigation work camp near North Yakima. He showed pictures of the Y. M. C. A. club house at Doty, Wash., of the Doty Lumber & Shingle Company, and a similar one at Harrison, Idaho, maintained by several lumber manufacturing concerns there. Of the logging camp type, he showed pictures of the welfare club houses of the Sunset Timber Company at Firland, Wash., the Clear Lake Lumber Company, Clear Lake, Wash., and the Inman Poulson Lumber Company, Kelso, Wash., and the Y. M. C. A. welfare car at the camps of the Potlatch Lumber Company. In concluding his illustrated talk, Mr. Goodell declared the Y. M. C. A. made better men and better citizens of those within the reach of its influence.

There followed some statements of employers. A. W. Laird told how Mr. Goodell had a year or so ago explained the welfare work to the late William Deary, the predecessor of Mr. Laird, and Mr. Deary had said that if it would do anything to help the men he was for it. Mr. Laird spoke highly of the result of the year's experience at his company's camps, not measured in dollars and cents but in the good it had done.

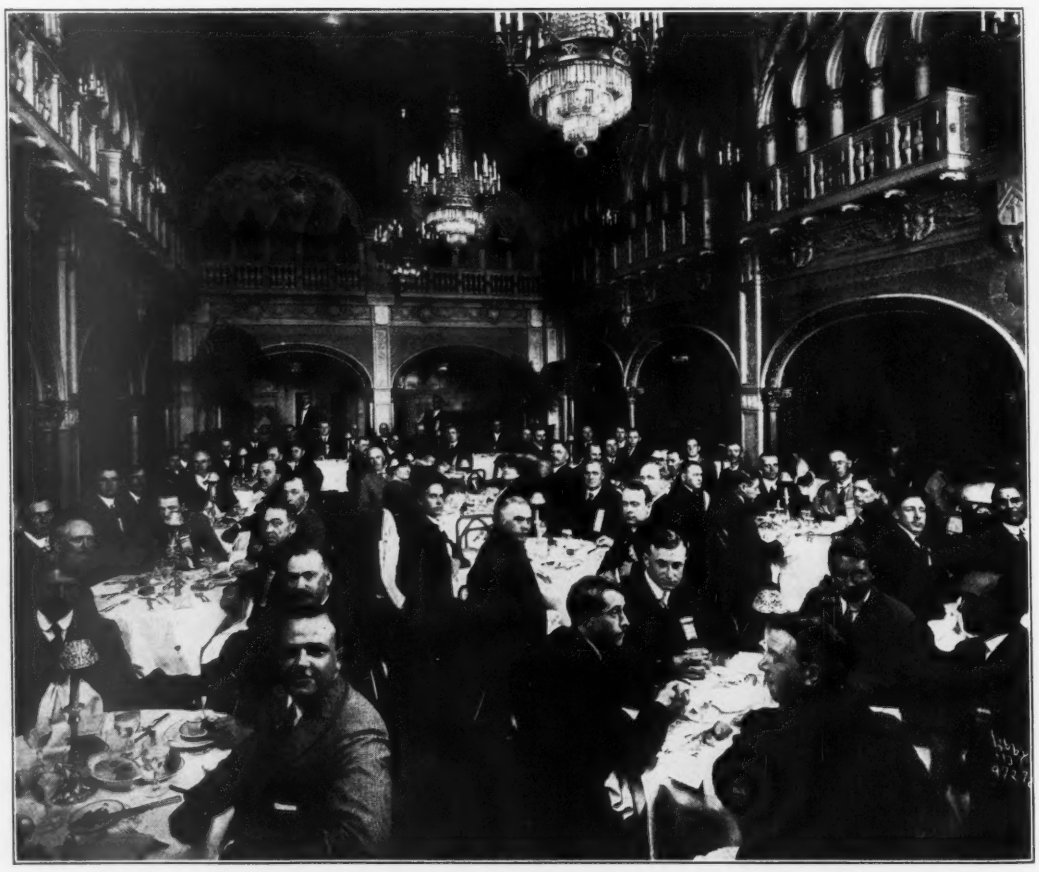
R. W. Mercereau, of the Doty Lumber & Shingle Company, expressed his approval of the Y. M. C. A. club house at that company's plant at Doty, and explained the nature of the work being done for its employees. It is the social center of the town, and the men and their families all participate in its benefits.

T. P. Jones, superintendent of logging of the Potlatch Lumber Company, said that its men are all pleased with the benefits they are receiving from the club car at their camp.

B. R. Lewis, of the Clear Lake Lumber Company, said the company established a club house for the Y. M. C. A. at one of its camps last January and he believed the men liked it. Another camp did not have the Y. M. C. A., and while he believed it was a good thing for the men, it had not been demonstrated that it enabled them to put logs in any cheaper. The company is continuing the club house and hopes yet to prove that it permits of cheaper logging. As a matter of sentiment, Mr. Lewis favored it.

J. D. Young told of the Y. M. C. A. club house in the Inman-Poulson Lumber Company's camps. He declared it brought better men to them. If they wanted whisky bloats at their camp they would run them wide open as formerly, but the Y. M. C. A. club house and its influence were bringing a better class of men. Only recently he spoke to 70 men at his camp, and asked the men what they thought of it. Of these, 67 favored it, and 3 only were against it, and the expression was secured by unsigned written statements from them. He only wished that that club house was double its size. The expense was 1½ percent added to the pay roll, and he believed it added 5 or 6 percent more to the efficiency of the men, for they are doing 12 percent better at their camps this year than last year.

George F. Fox, of the Anaconda Copper Mining Com-



THOSE IN ATTENDANCE AT THE WELFARE DINNER IN THE HALL OF DOGES.

pany's logging department, Bonner, Mont., added his approval of the Y. M. C. A. logging camp work.

W. A. Sellwood, who had charge of construction camp Y. M. C. A. work, told of some of the experiences in this work.

Several employees of the Potlatch Lumber Company's camps told of their appreciation of the Y. M. C. A. camp work, including William Pollock and Tom Connelly. The latter, especially was enthusiastic in his praise of the great help to the men of James Lansburry, the Y. M. C. A. secretary at their camp. He is their first aid, he declared.

Secretary Lansbury spoke briefly owing to the limited time. Born in the heart of London, he is now a worker in the Y. M. C. A. logging camps. He declared he had always supposed he was the black sheep in the family until he read the August *McClure's* and learned that the rest of his relatives in London were in jail as suffragettes. He spoke strongly and fervently, declaring at the outset that he could better talk to lumber jacks. The experiences he related kept his auditors interested and amused.

"The Y. M. C. A. in the logging camp is practical. If I had a year in Mr. Lewis' logging camp I would

B. R. LEWIS, OF SEATTLE, WASH.;
With the Clear Lake Lumber Company.

guarantee to make logs cheaper or work for nothing," declared Mr. Lansbury, in conclusion, as he sat down amid a burst of applause.

Mr. Toole, in closing the meeting, expressed his earnest approval of any movement such as this, designed to bring about the moral and physical betterment of a class of men that need such help.

FRIDAY MORNING SESSION.

Friday morning's session was called to order about 9:45 by the presiding officer, J. J. Donovan. The secretary read more telegrams of regrets and also one from President E. P. Blake, urging that the congress take some action toward securing chairs of logging engineering in western universities and colleges.

The Chair then introduced B. R. Lewis, of the Clear Lake Lumber Company, Seattle, Wash. Mr. Lewis' address was on the program for Thursday, but its delivery was postponed until this session. He spoke on the subject of "The Model Logging Camp," as follows:

THE MODEL LOGGING CAMP.

B. R. Lewis, of Seattle, Wash., Describes His Company's Structures.

Your secretary has insisted upon my presenting a paper to this logging congress on modern camp buildings, but I am afraid if I hold myself strictly to this subject it will be of very little interest to the principal loggers in this congress, as camp buildings are only one of the small details in getting our logs to the sawmill.

Our company has two types of camps. Camp 1, located on the south side of the Skagit River, at an elevation of about 500 feet, is composed of fourteen bunk houses 12 by 26, built on sleds, extending four feet from the bunk house in the rear and six feet on the front, so they can readily be loaded on cars. The sleds are put together with two cross timbers and bolted with three ¾-inch rods. The bunk houses are built with joist, studding and rafters two feet apart, sheeted with No. 2 shiplap, sided with 4-inch D. & M. put on perpendicularly, and a shingle room. The floor is 2 by 4, D. & M., with one window in the rear and two in the front and one door.

Each bunk house is furnished with six double steel bunks with springs and mattresses, with capacity of twelve men, and one 26-inch stove.

In addition to this we have a wash room built separate 14 by 24. We have a bath-room and dry-room 12 by 36 feet. The dry-room is 12 by 24 feet, furnished with a large heater with twelve 1-inch coils. A 100-gallon tank in the bath-room is 12 by 12 feet, and is furnished with three shower baths and an 8½-foot galvanized iron sink. This is one of the most popular features that we have at camp.

For Recreation, Health and Comfort.

We have a Y. M. C. A. building built in two sections so it can be loaded on cars the same as the other buildings; the two sections joined together are 24 by 40 feet. The company pays the secretary and furnishes the light and heat and the men furnish the paraphernalia. They now have two pool-tables, phonograph, and they take about thirty daily, weekly and monthly papers and magazines, and they have a library of about 650 volumes, together with a clothes press, punching bag and games of different kinds.

Our office and commissary is built in the same style as the other buildings and is 12 by 40 feet. We have another building 12 by 36 feet which is for the foreman, clerks, etc. Another building 12 by 24 is for the superintendent and the management.

Our main dining room is 24 by 76 feet. Our kitchen and rooms for the cook-house force are 26 by 46 feet. Our buildings are all lighted with electricity. Our dynamo house is also made portable as well as the tool house, warehouse and filing house—everything with the exception of the cook-house. The next cook-house that we build we anticipate building it in sections so it can be readily moved.

Camp 2 is built at an elevation of eleven hundred feet and is built permanently on the old plan, but is very light and roomy. The bunk-houses are furnished with iron beds, springs and mattresses, each house holding about forty men. The cook-house is on the same plan as that at Camp 1, with the exception that it had a little more light in it, making it much more pleasant, which I consider is a very good idea.

We have a shower bath and dry-room at this camp, but no Y. M. C. A. building. The office is built on about the same plan. We furnish both the camps the same and it is hard to tell which gives the more satisfaction.

A Doubtful Provision.

We have given the Y. M. C. A. at Camp 1 a good deal of study and we can not figure that it keeps the men any longer, or gives any more satisfaction to the crew, or, in other words, enables us to put in logs any cheaper. We have thought perhaps this was caused by our not having as good supervision at that camp, for the first eight months of this year our foreman did not have the nerve that he should have had in handling his men. I consider camp buildings and equipment a business proposition. The only reason we have for bettering our equipment, camp buildings, etc., is to enable us to deliver our logs to the mill at the lowest possible price and my experience has taught me that, no matter how good your accommodations and your board, unless you make the men pay well for them and maintain good discipline you will not be able to accomplish these results.

Strict Discipline an Essential.

This brings me down to my remark at the beginning of this address, that camp buildings are only a small detail of getting the logs to the mill; the main thing is supervision. You will agree with me when I say that the men are not as efficient as they were twenty years ago but I think the supervision is much weaker than it was years ago, and this is the principal cause of the lack of efficiency in our woods today.

When you find a foreman who will apply himself to modern methods of putting in logs and at the same time hold the men down to the old method of discipline you will find a man who gets better results for his company.

We have had too much prosperity generally and the lumbermen are not sufficiently organized to protect their own interests. I believe that the men should be given good board and good, comfortable accommodations—this should attract the better class of men—and then run our business with a strong hand.

Rules for Handling Employees.

I have given our superintendent instructions when a man was maliciously destroying our tools or other equipment to charge him up with the damage he had done; when he neglected his duty to discharge him and dock him for his time. We have established a rule that every man must give notice the day before he leaves our camp and every man in an important position, such as cook, blacksmith, hooktender, loader and engineer etc., who left our employ without giving us time to get a man in his place we would not settle with. If such rules as these were put into effect by all lumbermen I think it would increase the general efficiency of all of our men; also requiring those in important positions to have good records before they could assume a higher position with an increase of wage. This is all up to the loggers and lumbermen themselves. As it is now, every man is for himself and does not try to work with his neighbors; the men are better organized than their employers. I believe in being just with the men and in forcing them to be square with the company.

Cost of Boarding Woodsmen.

Another matter in this line that interests me very much is the price of board. We have been charging $5.50, but beginning October 1 our company is going to charge $6 per week board, as we find we must get this price or we can not come out even on our cook-house, and our company purchases its supplies at wholesale, while if we had to purchase them at the regular retail price our loss on the cook-house would be something disastrous. The price of provisions has been constantly going up and there is no reason why we should not increase the board, and in justice to ourselves we should get $6 per week, and the only reason we have not done this before is on account of the lack of coöperation. But beginning October 1, regardless of what our neighbors do, the Clear Lake Lumber Company will charge $6 a week board in its camps, and will advance its board hereafter according to the advance in provisions. The recent advance in meats alone would warrant us in making this advance of 50 cents per week.

Our idea in constructing our camps is to take good care of our men and make them as comfortable as possible; not humor them but keep them in their natural element and make them feel at home, but make them pay for what they get.

H. J. Robinson, Portland, Ore., of the Westinghouse Airbrake Company, was also on Thursday's program, but remained over and delivered his address Friday morning on "Handling Air":

HANDLING AIR.

Covering the Maintenance and Proper Handling of Brakes by H. J. Robinson, Portland, Ore.

When requested to prepare a paper regarding air brakes the question arose as to what particular phase of this subject would most interest this meeting, realizing that a great deal of a technical nature could be brought out, also that a resume of the many improvements which have been developed during the last few years might be of interest. However, it was decided that a short talk covering maintenance and proper handling of brakes in logging service would probably be of more practical benefit and therefore of more interest to a meeting of practical men such as are here assembled.

The air brake is quite generally looked upon purely as a safety device, and while this is quite true, it has other reasons for its existence.

It may be somewhat of a surprise to hear it stated that the brake under a single car is more powerful than the locomotive than pulls the train; but this is a proven fact. It takes a locomotive and ordinary passenger train from five to ten minutes and a distance of five to seven miles to attain a speed of sixty miles per hour. We are able to stop the average passenger train in about twenty seconds' time and in less than two thousand feet.

To illustrate more graphically the work performed by the brake in dissipating energy, we might take the example of a passenger train consisting of two locomotives weighing 194 tons each and ten passenger cars weighing 75 tons each and running at a speed of 80 miles per hour: the work done in stopping this train being sufficient to lift a weight of one ton over 48 miles or sufficient to lift a weight of 737 tons to the top of a building 347 feet high. This make-up of train and speed is not unusual in some parts of the East.

This is mentioned to show the importance of the air brake, not only as a safety device but as a vital factor in the transportation problem, as it would be impossible to operate modern heavy and long trains at speeds which are now common, if it were not possible to dissipate quickly the energy stored in the train as is done by means of the air brake.

Considering the investment, there is no part of the railway equipment which gives greater material returns if properly installed, maintained and operated, as by its use only is it possible to stop modern trains quickly, smoothly and without damage to rolling stock or lading.

Air Brakes an Important Factor in Handling Logging Trains.

Air brakes are now recognized as being an important factor in handling logging trains and are especially adapted for this particular service on account of the steep grades encountered.

Where hand brakes alone are in use, the question of personal injury is paramount and in addition it is not possible to obtain the same smoothness of operation as with the air brake. Slid flat and broken wheels are in nearly all cases the result of using handbrakes.

Uniformity of wheel temperature can not be obtained with hand brakes used in conjunction with air brakes because of the human element and the great variation in brake force delivered to the wheels with various weights of cars, designs of hand brake gear, etc.; also, on account of great and unavoidable difference in the air pressure existing in the brake cylinders and, therefore, on the brake shoes at the time the train men apply or re-apply the hand brakes.

The minimum of wheel damage in the form of cracked plates and slid flat and the maximum train safety can only be obtained by the use of the air brake exclusively for controlling trains on descending grades, for by this means only can the brake force be most uniformly developed on the different cars.

It has been observed in some few cases that the hand and air brakes worked opposite to each other instead of in harmony. This is especially dangerous, as should trainmen be applying the hand brakes and the air brake be applied at the same time, the trainmen are more than likely injured. The Federal authorities do not allow this condition to exist on roads doing interstate business on account of this danger and care should be taken when applying air brakes on logging roads to have the hand and air brakes work in harmony.

It may be said that often air brakes as applied to the majority of logging cars are not efficient, when used alone to control trains when descending very heavy grades, such as are encountered on logging roads, and it is therefore necessary to use hand brakes in addition to the air brakes.

In order to obtain the necessary amount of braking power by using air alone, some few logging roads are using what is termed "Combined Automatic and Straight Air." This is the ordinary quick action automatic brake with the addition of straight air on both the locomotive and cars, which consist of another pipe line and a few additional operating parts.

With this arrangement when descending a grade the automatic brake is applied and before being released the straight air is applied also; the automatic brake can then be released and with the straight air held, applied pressure is maintained in the brake cylinders throughout the train, the amount of pressure depending upon the adjustment of a reducing valve which may be varied to meet conditions of grade, etc. With the straight air holding the brakes applied and the automatic brake in release, the brake system becomes fully charged and full braking power is therefore available at all times should an emergency arise or it be desirable to make a quick stop.

If more breaking power is required than can be obtained by the use of one brake cylinder as for exceptionally heavy grades, a second brake cylinder can be applied in conjunction with the straight air by which means the braking power may be increased while descending the grade at the option of the engineer.

Handling Log Trains on Down Grades.

Perhaps the most simple solution of the problem of handling log trains down very heavy grades is to increase the braking power on the cars to between 100 and 125 percent of their light weight, then by means of a double regulation of brake pipe pressure use a low pressure when handling empty cars in order to avoid sliding wheels and a higher pressure when handling loaded cars in order to get the required braking power property to control the speed when descending grades.

In order to obtain this high amount of braking power, on loaded cars a larger brake cylinder and auxillary reservoir would be necessary than where the braking power is based on the light weight of the car as is now the general practice.

This scheme is not practical when logging cars are to be mixed with other cars in general merchandise trains as the braking power would be so much higher than the general service cars when empty that slid flat wheels would be had on the logging cars.

An improved type of retaining valve is also now available which has a spring-weighted valve instead of the usual iron weight and is therefore more reliable, as its action is not affected if it should be a little out of vertical on the car, and which is often the case in logging service. These retaining valves can be obtained to hold such pressure as is requisite for any particular grade.

To meet a similar condition in heavy ore, coal and oil service there has been developed what is termed an "Empty and Load Brake." Two brake cylinders, as well as some other additional apparatus, are used with this equipment, only one of the cylinders being used when the car is empty, but both being used when the car is loaded, in this way increasing the braking power on the loaded car to about the same percentage of its total weight loaded as it is braking when empty. This can perhaps be more readily understood from the statement that with this type of brake the loaded cars can be handled approximately as easily down the grade as empty cars at the present time.

This would no doubt make an ideal brake for logging service but is somewhat complicated and for that reason and because most logging roads are not equipped with cars for this class of apparatus, the device has not been brought to the notice of those in the logging business who might possibly be interested.

Like all mechanical devices the air brake must be properly maintained to remain efficient. This means that the triple valve on each car must be clean and properly lubricated, the brake cylinder packing leather in good condition and lubricated with a special lubricant which will preserve the leather and keep it from becoming porous or hard as will result if ordinary oils are used. Piston travel must be properly maintained between five and eight inches and brake rigging must be adjusted so that no part fouls and prevents the braking power being transmitted to the brake shoes.

Holding of Brakes for Long Periods to Be Avoided.

In handling trains when descending grades, high speed and holding the brakes applied for long periods should be avoided. The brakes should be released and recharged as often as speed and excess pressure will permit. Some of the points to be considered in this connection being:

The brake work required for a stop increases much more rapidly than the speed. This may be illustrated by the fact that with present form of passenger equipment a train running at 60 miles an hour can be stopped in about 1,100 feet, but that if the same train is running at 80 miles an hour and the same brake applied with the same force it will still be running 60 miles an hour at the end of 1100 feet or at the point it was stopped from the speed of 60 miles per hour.

On a descending grade a certain portion of the braking or holding power is required to prevent an increase in speed. The accelerating force, due to grade alone, is 20 pounds per ton percent grade, so that it may readily be seen the work required of each brake to prevent a gain in speed increases with the weight of the load. Should there be any cars in a train having poor holding brakes,

the weight of such cars is added to that of the cars having good brakes and increases the difficulty of properly controlling the speed of the train.

A train can not be said to be under proper control if it is barely possible to prevent the speed increasing, as the holding power available for stopping a train is that in excess of what is necessary to prevent a gain in speed. As generally understood, a train is under control when it can be brought to a stop in a reasonable flagging distance.

Amount of Pressure Obtainable.

The amount of pressure obtained in the brake cylinder depends on the amount of pressure in the auxiliary reservoir at the time the brake is applied and as the pressure reaches the auxiliary through a small groove in the triple valve, sufficient time should be allowed to replace the air used in a previous brake application before again applying the brake.

The braking power available depends upon the amount of pressure admitted to and maintained in the brake cylinder, and in order to hold the pressure the brake cylinder and its connections must be tight and the packing leather in good condition. Quite often the latest improved brake equipment is purchased at considerable expense and then the efficiency of the equipment impaired by lack of proper maintenance, and it can be readily understood that if brake cylinder leakage exists all of the other brake apparatus is useless so far as its ability to control the train is concerned.

Retaining valves are an important factor in grade work and should be maintained in good condition, and all used when descending grades. The value of the retaining valve will be better understood when it is stated that the 15 pounds pressure it holds in the brake cylinder equals nearly one-third of the total brake power possible to obtain on a car with a full service application from the usual standard (70 pounds) pressure, and in addition helps to hold the train while recharging the auxiliary reservoir by reason of blowing down brake cylinder pressure slowly when the brakes are released.

In order to determine if all brakes are performing the work expected there is no better plan than that of feeling the wheel temperature on arrival of the train at the foot of the grade. Should the wheels under any car show a lower temperature than the average for the entire train it indicates that the brake on the car is in poor condition. (This is termed the "Thermal Test" and is more reliable than any other known, but can not of course be made when hand brakes are used in conjunction with air brakes.)

Much could be written concerning the subject of "Air Brakes," only a very few of the points which it was thought might be of interest having been covered in this paper, but the writer wishes to take this opportunity of advising that it will be considered a pleasure at any time to render any possible assistance in air brake matter to logging roads.

Mr. Robinson's address was received with a great deal of interest and at its conclusion Mr. Donovan called especial attention to a statement in the address that a train properly equipped with brakes, when running 60 miles per hour, could be stopped within 1,100 feet, but the same train running 80 miles per hour with these brakes applied would still be running 60 miles per hour at end of 1,100 feet. Mr. Donovan also said that although George Westinghouse had made modern railroading possible, many of the best informed railroad men do not ride on the fastest trains because of the above condition.

The Chair called E. T. Allen to the floor, saying that the forester was so well known he needed no introduction. Mr. Allen's subject was entitled "Latest Devices for Forest Protection."

FOREST PROTECTION DEVICES.

By E. T. Allen, of Portland, Ore.—Forestry the Final Analysis of an Entity.

A truth less realized in America than in older countries is that forest industry is in the final analysis an entity. Man needs wood in various forms. To make the earth supply it, adding such labor as is required to make it available and suitable for his use, is a business. Convenience may require that it be conducted by one unit of management, as when the small mill cuts its own timber and retails to local consumers, or by several, as when timber, logging, manufacturing, jobbing, transporting and retailing are each under separate proprietorship. But although the latter system may produce some conflict of interest, between its units, it can not possibly destroy the greater mutual interest of all branches of one business. In the long run the prosperity of all has a common basis and this must include perpetuation of the resource dealt with, economy in every process, and just payment by the consumer for the services rendered.

Everyone of these three things involves more than is under the individual control of any unit. It involves the influence of the other units and of the public. Consequently you as loggers should be interested not only in the economies of your own processes, which this congress is called primarily to discuss, but also in the progress of forest protection and its incidental work of public education in many things that affect the industry as a whole. And while latest devices for fire fighting are what I was really asked to report upon, I believe there is quite as much real development by protective agencies along other lines, and that there is perhaps even more need for us all to understand its trend and object.

Growth of Coöperative Patrol Movement.

The coöperative patrol movement in the Pacific Northwest has had phenomenal growth. It is only about seven years since the forest protective association was formed by a few timber owners in the Coeur d'Alene district. Their plan did not go beyond cheapening and improving a local fire patrol. Now there is a chain of similar associations from the Montana Rockies to northern California patrolling over 20,000,000 acres, employing many hundred trained men, and spending hundreds of thousands a year. They protect about 500,000,000,000 feet of timber, or a fifth of the Nation's entire supply, and keep the loss down to so negligible a figure that it can hardly be expressed in terms of percentage.

Coöperative patrol has proved so successful that even in these few years it has established a wholly new channel for the direction of public forest protection policies, State and Federal. Once almost regarded as disciplinary and directed at lumbermen, necessarily originated and executed without consulting their interest, forest legislation is now mainly along the lines of strengthening a team relation between lumbermen and official agencies, one which shall utilize private interest and competence to the utmost. The associations have legalized official standing as representatives of the State or Government. Whereas, at one time the effort was to collect from forest owners funds to be expended by public officials, it is now rather to discover ways in which private protective systems can serve as the most efficient agencies for public expenditure. They are also consulted as to punitive laws and constituted a constabulary to enforce them.

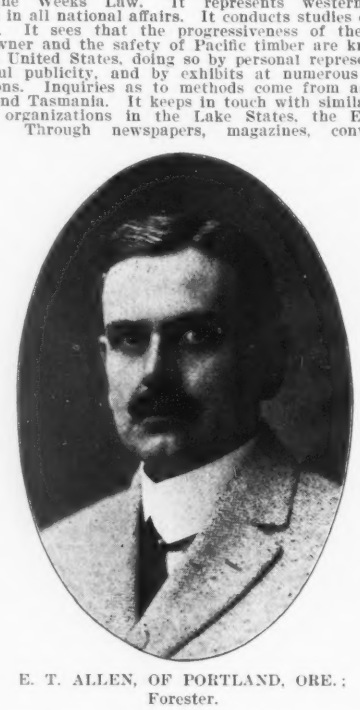
I sometimes wonder whether the true significance of this change is realized. It means that those Coeur d'Alene men unwittingly discovered a gate through which forest industry is passing the barrier of public misunderstanding and distrust to take its rightful place in the community as a useful and commendable industry. Certainly it has not its rightful place until its voice is welcomed and respected in all men's councils that affect its welfare. To have such a voice in strictly protective affairs is not so old or trifling a thing that we should accept it without gratification. It is infinitely more important that it is also the voice of all forest industry, earning an influence in all affairs that affect the lumberman, whether the making and enforcing of laws or of that which is greater than law—public sentiment.

Alliance Formed to Carry on Patrol Work.

When the extending and improvement of coöperative patrol became of recognized importance, the pioneer associations allied in the Western Forestry & Conservation Association to maintain facilities for this purpose and also for carrying on a campaign of public education in the fire evil, so there might be fewer fires to find and fight. To some of you, perhaps, it still symbolizes these things only. You know only of its forest fire conferences and its precautionary material that reaches the reading public. To such, before passing to devices for fire prevention, I want to speak of the system by which our organization assists you in these other things I have suggested.

The truth is that the work of the central association is now chiefly along these other lines. Its part in developing local fire work is practically accomplished. Of twenty-five local associations on the Coast (seventeen in Oregon alone) only the original five in Idaho and Washington do not owe their existence to its organizing influence. To a large extent it shaped the laws and appropriations under which they work. It has facilitated their exchange of methods to increase efficiency and by its educational work done much to prevent carelessness with fire from overtaxing methods and funds. And it still contributes perhaps as much as ever in most of those directions. Yet in the nature of things it must do so with less proportionate title to credit and more anonymously. It would fail did it not built up independent efficiency among the locals and, obviously, since it is they who must maintain membership and make assessments, it must let them utilize to the fullest every opportunity to point to success in local matters outside of their fire work, even if the central association is really the prime mover.

Consequently the Western Forestry & Conservation Association is more and more assuming the less spectacular but no less necessary functions which, for similar expedient reasons, the locals can not perform. It has been the chief promoter of reciprocal relations between associations, State and Federal protective agencies, not only locally but in such matters as securing large sums for Northwestern States under the Weeks Law. It represents western forest interests in all national affairs. It conducts studies of forest taxation. It sees that the progressiveness of the Pacific forest owner and the safety of Pacific timber are known all over the United States, doing so by personal representation, by skilful publicity, and by exhibits at numerous eastern expositions. Inquiries as to methods come from as far as Russia and Tasmania. It keeps in touch with similar forest owners' organizations in the Lake States, the East and Canada. Through newspapers, magazines, conventions,



E. T. ALLEN, OF PORTLAND, ORE.; Forester.

clubs, commissions and public boards, it utilizes every opportunity to reach our local northwestern public.

In short, no matter what or where the tendency or the crisis, western forest industry is assured representation which is not suspected of ulterior motive but welcomed because it is kept scrupulously free from any but mutual private and public interest. And throughout it teaches this true principle—that not forests but forest industry is what America really seeks to perpetuate; that there is no object in growing or preserving forests without at the same time affording justice and stability to the industry that alone can make them useful; and that it is one great industry which can not suffer undeserved injury in any branch without injuring all and eventually the public.

The National Conservation Congress.

Before leaving this class of modern devices for forest protection, perhaps I should report briefly on one particular project. You have all heard of the National Conservation Congress, a yearly gathering of prominent and influential people from all over the country, which should have much power but has at times degenerated into a political arena and at others into a narrow and not very constructive discussion of subjects in which lumbermen or foresters have only a general interest, if any. A result of our influence, since taking the stand that forest industry (and that of the Pacific coast by no means least) should have a voice in such affairs, is that this year in Washington, where the congress will have unusual influence, it is to be devoted largely to lumbering and forestry, discussed by people who are part of them and know what they are talking about and with funds for giving the information wide publicity. Fifty men have been assigned study of practical subjects. The lumberman's point of view will be fully presented, and the most important topics have been assigned to speakers from the Pacific Northwest. Particular attention will be given to showing the public the business conditions that govern the production and sale of lumber.

Returning now to fire prevention in the woods and around our camps. Never in history has there been such rapid advance in technical methods as since our State, Federal and private fire fighters have attacked the problem jointly with full knowledge of each other's inventions and a friendly spirit of rivalry. Coöperation has removed the tendency to regard each other as impractical and consequently to disregard different theories.

The Oregon Compulsory Patrol Law.

In reviewing progress since our last meeting perhaps the most notable innovation is the Oregon compulsory patrol law enacted last winter. Every timber owner must maintain a patrol as good as do 51 percent of his neighbors, or the State may do the work and collect a maximum of 5 cents an acre in the same manner that taxes are collected. The State forester has platted the entire private ownership of the State and of those not already doing good work requires that they install patrol or join an association. He encourages the latter course. There has been surprisingly little objection to the law and so far no necessity of State action. Although to learn ownership and get things going has taken much of the season, about 3,000 owners are now paying into the associations for the first time. The State also contributes to these associations.

It was a comparatively easy season judged by modern standards, for losses were negligible—probably the least in northwestern history. We must not forget, however, that this was not all due to the weather. In old days, as much dry windy weather as we had this year always did much damage, for there were countless smouldering fires for it to fan up and no machinery for jumping on them. It means that protection is so good now that we don't have to worry except in a very bad year. But the bad year will come and there is none the less need for constantly strengthening our defense to meet it. A good year gives just the chances needed for perfecting details we can not touch when overworked.

Progress in Telephone and Trail Building.

Consequently this season has seen much progress in telephone and trail building and particularly in equipping lookout stations. There is increasing use of men for this purpose only, with facilities for taking and communicating cross-bearings on fires so that other men can be sent to the exact spot without delay. Some of the results have been remarkable, locating a distant fire on the exact forty. This work is done by the use of good maps and carefully oriented protractor dials, much as courses are laid on a ship's chart. Portable telephones are found useful by mounted patrolmen, but there is no less need for permanent lines and these are being better built than before. The Forest Service in particular is also doing much experimenting with specially weather- and bullet proof instruments.

Portable wireless is not yet in use with us, but its probable value as an auxiliary to trunk telephone systems, especially in rough country or at large fires, is causing considerable experiment and next year is likely to see field tests.

Among experiments with tools, one likely to interest loggers is a gasoline fire engine built by the Forest Service for use around camps or elsewhere that water is obtainable. Costing but $200, it is said to deliver 25 gallons a minute through 1,000 feet of 2-inch hose with a 150-foot rise.

We have all long known that our greatest fire danger lies in the hot dry interior wind known all over the Pacific coast under different names. It is a "Chinook" in spring or winter; in summer the "east wind" of the Cascade region, the "norther" of California, and east of the Columbia Basin is likely to be deflected eastward up the Idaho mountains. It has caused most of our disastrous sweeping fires and, as our facilities for handling ordinary conditions are becoming adequate, constitutes our great future hazard. A city fire department may seem perfect, but an earthquake may burn a San Francisco, and no forest region subject to a wind like this is wholly immune from a Hinckley, Gaudette, or Coeur d'Alene forest fire calamity.

Forecasting the "Chinook."

The Weather Bureau, the Forest Service and the Western Forestry & Conservation Association have just inaugurated a study of the possibility of accurately forecasting this wind and distributing the information to loggers and protective agencies so that if conditions warrant camps can be shut down, burning delayed or other precautions taken. Generally speaking, it should be simpler than most weather predicting, for the conditions producing the wind are interior, not at sea, and can be observed. They consist of a high pressure area in upper British Columbia or Alberta coincident with a low pressure area in the California region, causing the flow from one to the other of a violent interior air current which carries no moisture and is consequently exceedingly drying.

Theoretically, all that is necessary to forecast this is promptly reported barometrical readings from both regions and we have taken steps to secure the coöperation of the American and Canadian weather officials in this respect. Practically, there may be difficulty in getting proper reports from the sparsely-settled portion of the northern area and also in calculating local exceptions to the general current. Certain parts of our territory are affected by such a wind under general and determinable conditions but others may have the general wind diverted by other pressure areas or be subject to dry winds caused wholly by the latter. Until these questions have been further studied it is hardly wise to attempt systematic forecasts, for mistakes in the beginning would brand the project as impractical and only annoying. But we hope that by next season something will come of the investigations being made by District Forecaster Beals, in charge of the Portland Weather Bureau office, who has been authorized to work it out if possible. I may say here that some of the Idaho patrol associations are also experimenting with local barometer readings.

Advisability of Burning Slash.

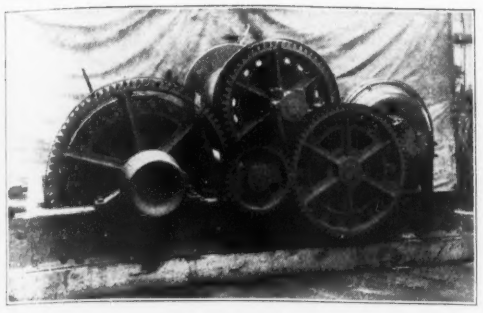
This was not as good a season as hoped for slash burning, but a great deal has been done, experience has been gained and belief in its advisability strengthened. There has been a marked tendency to tighten up on summer burning and burning without permit. We are realizing that the slashing is our greatest menace. There has never been a year in which slashing fires were checked so quickly and watched so carefully until rain fall. There has been quite wide adoption of camp fire rules, specifying in print the responsibility of all employees and emphasizing that preventing fire comes before getting out logs. The experiment will probably result in improved rules next year.

If there is anything needed in the average camp, especially now that the woods are full of patrolmen, it is a clear understanding of the foreman's responsibility for fire. He can not be blamed if, considering getting out logs the work upon which he is judged, he is reluctant to let anything interfere with it. His duty when this involves fire risk, both individually and in relation to the demands of fire wardens, should be most clearly laid down by his employer. Given such an understanding he often has the best possible judgment in the premises, but not always. Sometimes he does not know as much about fire risk as a specially-trained firewarden. Whichever the case, the responsibility should be fixed in advance.

I do not think the time far distant when every logging camp will have a fire plan, as specific as the safety equipment and drills aboard ship, including, not only every safeguarding appliance and the movements of the men in case of fire, but also precautionary planning of all operations. We do this with a mill. It is far more important with the material that supports the whole industry.

The protective branch of forest industry is no longer merely the patrol of mountain slopes by the owner. While he is reducing that end of it to a science, protection is in the nature of things being forced to serve more and more as the interpreter between all forest industry and the public, and to remove every hazard for which the industry itself may be held responsible. It must deal more and more with the logger and needs not only his support but also his technical thought and advice. We are all in one business and it pays to safeguard it. It is also more or less the public's business, and if we don't protect the public it may take a hand in ways to make us regretful. The more sincerity and ingenuity we all devote to forest protection, in field and camp, the sooner will lumbermen as a class reach a position where their voice will be welcomed as that, not of greedy acquirers and destroyers of trees, but of most useful servants of the commonwealth, deserving its reward for fostering and furnishing one of life's essentials.

The next subject on the program was electric logging and E. J. Barry, now electrical engineer for the St. Paul & Tacoma Lumber Company, Tacoma, Wash., formerly with the Potlatch Lumber Company. In his address on "Logging by Electricity" he told of the installation of two electric logging engines last year by



ELECTRICALLY OPERATED DONKEY USED BY POTLATCH LUMBER COMPANY.

the Potlatch Lumber Company, of Elk River, Idaho, and the results obtained. He said:

LOGGING BY ELECTRICITY.

E. J. Barry, of Tacoma, Wash., Describes Work of Electric Engines.

In October of last year the Potlatch Lumber Company, of Elk River, Idaho, placed in service two electric logging engines, and from results obtained, it is confidently expected that these will prove the forerunners of many similar installations in all countries where logging operations are carried on.

Last month the writer was able to make a test on these machines and the results are given in the hope that they may be of interest to lumbermen in general.

The logging engines were especially designed and built for electric drive by the Willamette Iron & Steel Company, Portland, Ore., for use with what is known as the McFarlane Skyline system. The McFarlane system is especially adapted for use in countries where the logs have to be removed from steep hillsides. A one and a half inch steel cable is anchored to standing timber on the crest of the hill the other being fastened to the hoisting drum of the donkey. This cable may be carried out a distance of 4,000 feet under favorable conditions; that is to say, where the weight of the trailing log will not cause too great a sag.

A carrier or trolley attached to an endless line brings in the logs, clearing the entire hillside within the limits of its travel. When one portion has been cleared the main cable is moved to a new location, and so on until a radius of from 3,000 to 4,000 feet has been cleared of timber. The logging engine may remain in one place for two or three weeks and thus save the expense of moving continually, which the older method of ground haulage involves. Also the logs are in much better condition for the sawmill when they have not been hauled bodily over gravel and rocks. Pieces of gravel are embedded in the bark with disastrous results to the saws when they come in contact. The skyline method permits of much faster handling as the logs, having only one end trailing, are not likely to encounter obstacles.

Electrical Equipment.

The electrical equipment of each machine consists of one 150 horsepower General Electric, form M, 550-volt, 600 R.P.M., 60 cycle, 3-phase wound, secondary logging type motor, equipped with solenoid brake. The motor is totally enclosed and of very rugged construction to withstand the exceedingly hard service the work involves. The control consists of a seven-point controller connected to a bank of resistance grids located in the rear of the skids on which the machine is mounted. The controller also operates the primary circuit, making the drive self-contained.

As a safeguard, a time element oil circuit breaker switch is also installed together with an ammeter mounted in view of the operator who is thus able to determine the safe stresses he can place on the steel cable. In practice it has been found that the cable is the weak link in the chain, the motor being able to take care of any and every load applied so far.

The brakes are operated by air, from a Westinghouse compressor driven by a 7½ horsepower motor. Compressed air also operates the signal whistle, a very important feature of logging equipments as in most cases of long haulage the operator can not see the load on starting, but must depend on signals given by the block-tender as to what he has to do.

Power is transmitted at 11,000 volts from the sawmill power plant located three-and-one-half miles from the present logging operations.

A portable substation mounted on flat cars as shown in photographs steps down the voltage to 600. Power is then supplied to the motors by triple conductor 000 cable steel armored and lead covered.

Expulsion fuses and horn-gap arrestors protect the primary side of the 200-kilowatt three-phase, oil-cooled transformers.

Line Construction Simple.

The line construction has been made as simple as compatible with safety and inclusive of all charges, clearing right of way, material and labor, but cost of land not included, amounted to $767 a mile.

* * *

The average daily haul for April this year was 33,000 feet for No. 1 donkey—an excellent showing, everything considered. On May 13, the machine under test brought in 55,000 feet of logs establishing a record. When certain mechanical defects in the equipment have been rectified it is expected that this record will be exceeded. The rate of travel of the trolley at present is 1,000 feet a minute, hauling in an average load of 1,700 log feet. It is expected to increase this rate of travel to 1,200 feet a minute on the new carrier shortly to be placed in operation.

It is to be remembered that the white pine logs in this district are small compared to the fir and cedar of the Coast timber, where the distances hauled would have to be shortened considerably.

For the test a curve-drawing wattmeter was used with an indicating wattmeter as check; an ammeter and voltmeter were used to check power factor. Running out light the carrier showed an average power input of 84. Hauling in logs scaling 1,000 to 1,500 feet showed an average power input of 139 horsepower. Loading logs on cars averaged an input of 107 horsepower, power factor equal 68 percent average.

Added Equipment Would Save Time and Power Consumption.

A decided saving in time and power consumption would be effected by using a separate motor and light hoisting apparatus for loading and so permit loading and handling at the same time. At present the one hoist has to do duty for both operations for which it is not suited. A 50 horsepower motor would have ample capacity for loading logs either on rollways or cars.

The advantages of electric over steam haulage can be summed up briefly: No fuel required, with consequent wastage of good lumber averaging about 1,000 feet a day for each engine; elimination of fire risk in the forest; power labor costs, no fireman or wood cutters required to supply fuel; no freezing of boiler tubes in winter and consequently no charge for night watchman in cold weather; maintenance costs less than with steam. Boilers have to be washed every two weeks and engines with reciprocating parts are harder on upkeep; no water required. This is often a serious item, it being necessary in many cases to pump water for a distance of two miles; no delays to get up steam and no shut downs through failure to pressure, a frequent happening on very long hauls; no danger of boiler explosion; greater adaptability in regard to speeds which can be increased beyond standard engine speeds presently in use.

This is an important point that will be recognized by all logging men, from the fact that the steam donkey is being built larger every year to give higher rotative speeds to increase the speed with which logs can be brought in. The speeds of reciprocating engines of the logging type appear to have reached a maximum owing to the great weight of the apparatus built to stand the racking strain which these speeds impose. On the other hand the speeds of motors are peculiarly adapted for fast work from the absence of reciprocating parts and adaptability for speed control.

Speed Variation With Efficiency an Essential.

Speed variation with efficiency is an essential feature for logging work. There are places where logs must come in at the utmost speed available and others where a slow pace is necessary. The electric motor of proper design fulfills these requirements more completely than any other mechanical appliance. The output of each machine can be standardized readily; the output of steam donkeys will vary in ratio to the attention paid to proper firing; it is estimated that a saving of at least 50 cents a thousand would be effected.

During 1911 the St. Paul & Tacoma Lumber Company, between contracts and camps, hauled 81,000,000 feet log scale. On combined operations the gross saving would be $40,500 from which the cost of energy would have to be deducted.

Our records average 10-kilowatt hours for each one thousand feet logged. This varies somewhat but is sufficient for practical purposes; 810,000 kilowatt hours a year at a rate of 1.5 cents equals $12,150; $40,500 minus $12,150 equals $28,350 saving, effected even at a minimum of 50 cents a thousand. The saving in elimination of one of the gravest fire risks can hardly be estimated in dollars and cents, but would pay a heavy interest, no one can doubt.

The Smith Power Company, of Marshfield, Ore., will have its electric logging engines in operation next summer when data dealing with Coast timber will be available.

The development of logging by electricity will prove a valuable help from the central station point of view, especially on the Pacific coast where transmission lines from hydro-electric plants pass through extensive logging areas. Naturally it is an off-peak load and continuous enough to be well worth trying to secure.

My thanks are due to Mr. A. W. Laird, general manager of the Potlatch Lumber Company, for the courtesy and assistance rendered in making the test.

Following Mr. Barry, E. F. Whitney, of the General Electric Company, Portland, Ore., was introduced and delivered a very able and interesting address on the "Development of Electric Logging Machinery." He said:

LOGGING MACHINERY DEVELOPMENT.

E. F. Whitney, of Portland, Ore., Discusses Advantages of Motors.

Pioneer applications of electricity always encounter a natural skepticism as to their success—the trials are always under the most difficult and unfavorable conditions. Nevertheless, we have yet to record one instance in which such applications have failed to produce successful economies.

In logging work, due to the heavy demands, momentarily imposed, and to the severe and varied conditions of operation, much has been said and written regarding the necessity of flexibility, ruggedness, overload capacity and efficiency of logging machinery. In fact, a machine is demanded which embodies all of the most desirable characteristics which can be produced, with also the demand that no one of these be sacrificed in favor of any other. What piece of machinery more exactly fits these conditions—all of them—than an electric motor and, in particular, a 3-phase induction type motor? Progress in its introduction, however, has been slow, because pioneering work which returns large rewards seldom has substantial support until it has, through its own efforts, proved itself.

Exact Essentials for Logging.

A brief summary will show the electric motor characteristics exactly suited to this service; later we will take up more in detail the requirements which have to be met.

A motor requires power only when performing work, eliminating all standby losses.

When working, the amount of power taken automatically adjusts itself to the demand. It follows that the period of service, and hence the depreciation, is less than in other types of motive power.

The maximum pull, which by design corresponds to or is above the rope breaking strain, can be and is made to come at any speed from standstill to full speed.

When working at full speed or at any other point of the controller a greater or less pull, as required, will automatically be exerted by the motor. It is thus sensitive to the demands of hauling conditions with very little change in speed. This means an increased production.

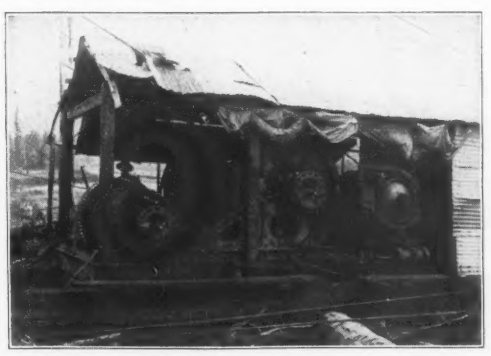
There is no time lag in waiting for steam or in the acceleration of reciprocating parts.

The motor starts, stops or reverses by the simple movement of a small handle through a short space.

It can be installed anywhere, without reference to water or fuel supply, and is always ready to operate instantly, irrespective of the length of time of shutdown.

In its design it has been made rugged enough to withstand being stalled without damage, should such occasion arise. In case of such a maintained condition an automatic overload disconnecting switch is provided and set just below the breaking point of the rope.

After complete disconnection from the lines the outfit is again ready for operation by simply closing the switch—a matter of five seconds.



EQUIPMENT OF POTLATCH LUMBER COMPANY SHOWING BRAKE END OF MOTOR.

PORTABLE SUBSTATION OF POTLATCH LUMBER COMPANY.

The type of control has proved itself in hauling and hoisting operation. The simple drum controller daily demonstrates its reliability under severe conditions of railway service.

No transformation in quality of motion from motive power to work; that is, rotary motion only, and not a change from reciprocating to rotary motion, permits of higher working speeds and enables the outfit to better stand the strains of suddenly applied heavy loads.

The number of parts reduced to a minimum—all parts large and substantial.

Wearing parts are reduced to a minimum; these, viz., bearings and collecting rings—have no effect on the efficiency. This valuable point is determined and set by the designing engineer and cannot be changed.

Characteristics of operation are fixed by the designing engineer and not dependent upon the personal equation of the operator.

These are some of the inherent positive advantages of the motor. Among the undesirable things avoided may be mentioned:

Only one man required per outfit,
No boiler or boiler repairs,
No water to be piped and pumped to the engine,
No fire at the scene of operations,
No fuel supply to be provided in the woods,
Elimination of numerous supplies and parts.

Conclusive Experimenting.

With the above as a basis and anticipating the additional advantages we would discover in actual operations, one of our engineers, conversant with heavy duty hoisting and excavating work, made a thorough inspection trip through the timbered sections of Puget Sound, the Columbia and Idaho. The results confirmed our belief in electric logging and preparations were begun to develop a complete line of machinery for such service. However, just at this time, negotiations were under way for a trial installation using equipment standard for crane and hoisting service. There was room for an honest difference of opinions as to minor points, so it was decided to await the results of the Potlatch trials—about which so much has been heard—in hope of discovering further simplifications. In this respect we were rewarded.

These trials were carried on during the summer of 1911 and were upon a standard wide drum type of engine handling logs varying from 1000 feet board measure to 5500 feet board measure. At no time did the equipment fail to perform the expected duty. Starting was rapid, control flexible and there were no noticeable variations in the speed of hauling over rough ground or more favorable country due to the outfit. The motor was a standard stock machine rated on a crane and hoist service basis. It showed no appreciable heating—in fact, after a 5-hour service run the temperature rise was less than the standard to which the motor was designed. The motor demonstrated its capacity for the work without question.

Features of a Simple and Rugged Outfit.

The results confirmed our knowledge that every effort must be made to produce as simple and rugged an outfit as possible, necessitating—

Motor with a capacity for very high intermittent demands—demands reaching such values as a rope pull corresponding to 300 or even 400 percent of the normal pull for which the motive power was designed.

A compact and simple drum controller, as it would be impossible to keep in adjustment any control scheme embodying interlocking parts, even in its simplest form.

A substantial armored cable, that could be laid along the ground or even in water, leading from the service point to the motor.

An automatic brake to positively stop the motor rotating the instant power was thrown off—to prevent over-winding the cable.

Alternating Current's Advantages.

Alternating current, 3-phase motors were chosen because of first cost, ruggedness, light weight, few parts, minimum of attention required, available sources of power, simple substation equipment.

Direct current series and alternating current, single-phase series motors have many characteristics admirably suited to this service but the complications of transforming equipment, higher first cost of upkeep, and greater weight precluded their adoption.

Along this line the 3-phase, alternating current motor outfits have been produced for three nominal ratings, the particular outfit to use depending upon the work and type of logging engine. A brief description will show the salient features introduced to adapt the equipment particularly to logging needs.

The motor is totally enclosed, making it weatherproof. The shaft is large, giving strength required for rapid reversing service and rigidity to resist springing when transported over rough country. Removable covers with weatherproof gaskets over handholes permit of ready inspection. As a further precaution the windings have a special moisture-proof insulation. To obtain an idea of its capacity and operating flexibility, assume a motor such as used on a heavy duty wide or narrow drum engine, for instance, the 12 by 14-inch size.

Assume main drum diameter 36 inches, gear ratio main drum to motor 30:1. This assumption corresponds to a condition at full motor speed of a piston speed in the engine outfit of 680 feet a minute and a rope speed on the bare barrel of the main drum of 185 feet a minute. Now let us assume a log being hauled at this rate of speed. One moment we will say it is passing fair ground; the next, encountering rough ground, or a stump, or other obstruction. When running at 185 feet a minute, rope speed, there is a pull on the line exerted of 36,500 pounds. Suppose we need a less or greater pull—the motor will automatically exert it with attendant conditions as follows:

Pull in Lbs. On main cable b. d.	Rope speed in Ft. per Min.
18,200	187
36,500	185
73,000	182
109,500	179
128,000	175

Motor's Flexibility and Capacity.

Note in particular the pull of 128,000 pounds at a rope speed of 175 feet per minute and the radius of this pull is not less than 18 inches. Thus we see that while the available pull has varied between 18,200 pounds and 128,000

pounds, which latter is above the breaking strain of 1¼ inch plough steel cable, the speed of handling has varied only between the limits of 187 feet per minute and 175 feet per minute, or 6.5 percent variation, while the torque has traveled through a range of 700 percent and all this without the operator moving a muscle. That is what maintain productions means. Consider the significance of that pull of 128,000 pounds. It is sufficient to accelerate a loaded freight train of 4,700 tons gross weight on a level track and bring it from standstill to the rope speed of 185 feet per minute in 10½ seconds time. If pulling in opposition it would equal the maximum combined pull of five Shay locomotives with 50 tons net each on the drivers.

These are the conditions we have prepared to meet. During such a cycle no distress has been shown, because our power supply has not been limited to the output of a boiler the size of which is limited. We have assumed the highest working speed for such heavy duty. Suppose the topography of the country demands a slower rope speed. Any speed for the above pulls from standstill up to full speed can be obtained by means of the other points of control. So much for the motor's flexibility and capacity.

Accessories and Their Use.

During such a cycle no distress has been shown, because our power supply has not been limited to the output of a boiler the size of which is limited. We have assumed the highest working speed for such heavy duty. Suppose the topography of the country demands a slower rope speed. Any speed for the above pulls from the standstill up to full speed can be obtained by means of the other points of control. So much for the motor's flexibility and capacity.

The brake is of the automatic solenoid type. It applies itself whenever power is thrown off the outfit. A drum controller gives the necessary speed variation and also reverse rotation. Of necessity there must be slight burning at the contact fingers during the transition from one point to another. Proper inspection once a day to remove the burrs with emery cloth is all that is necessary. The contact pieces are easily removed for replacement and are inexpensive. The interior construction is similar to the controller used on street railway cars.

An automatic oil switch with an ammeter mounted on the cover serves to entirely disconnect the motor from the line for inspection or when a log becomes hopelessly jammed. When this switch is open the entire outfit is entirely disconnected from the line and may be handled and inspected as would be any other mechanical device composed of iron, copper, steel and brass. The ammeter presents to the operator a continuous indication of the exact work his machine is doing so that he may act accordingly. The switch is set by trial to trip out when the pull has reached the maximum value desired.

A motor-driven air compressor and reservoir provides for the signal whistle and also takes care of the pneumatically operated frictions. Thus the operator has complete control of the outfit with a minimum of exertion.

Special armored cable is made up in short lengths and connected together by a coupling that relieves the conductors of any strain in moving same. Similar cable is used for dredge work where it must often be submerged in water.

Substation Equipment and Electric Shock.

Substation equipment and its location will vary according to the conditions to be met. In the case of the Potlatch company and the C. A. Smith company we have the two extremes. In the first case, an individual portable substation for each logging engine; in the second, one stationary substation for each camp furnishing all the power used by the several engines. As much attention to suitable substation equipment has been given as to the logging motors themselves.

The question of liability to electric shock in operating the electric outfit has been presented in many ways, some worthy of consideration, some not. In such equipment all metallic parts which can be touched should be thoroughly grounded. This is the first step; then there can be no difference in potential between the operator and the grounded metallic parts and hence no shock. Should there occur a failure of the insulation the grounded frame of the motor would again protect the operator from shock. No current carrying parts can be touched while energized, for they are all enclosed by metal cases or frames and these frames are grounded.

Comparisons of Powers.

Comparative operation of the Potlatch equipments will be given in another paper at this meeting. We have no records of actual camp operations to show the power consumption in kilowatt hours per 1,000 feet board measure in skidding work. We have, however, other data which are absolutely accurate and which will enable us to arrive very closely at a figure which may be predicted. In steam operations using oil fuel, Mr. Van Orsdal presented last year a paper giving three records of operations. The average of these three shows:

Average fuel per day per donkey.....8.8 Bbls.
Average logs per day per donkey....76,200 Ft. B. M.
Average distance of yarding.....670 Ft.
Average size log.....1900 Ft. B. M.

The above shows an average time of 15 minutes per log yarded 670 feet. We will assume conditions favorable to power generation with this amount of oil, viz.:

Engine working 70% of time,
Delays 30%

This stipulation is made to insure that the demands for steam will not exceed the generating capacity of the boilers. In high grade stationary boilers with good settings, draft and other conditions favorable one pound of oil will evaporate about 14 pounds of water from and at 212 degrees F. This is under better conditions than can prevail in a logging camp. We will therefore assume that 11 pounds of water per pound of oil is the average performance. Then 8.8 barrels per day will give 11x8.8x336=32,500 pounds steam per day. Deducting only 10 percent for fuel during delays, blow-off, leaks, radiation etc., leaving net 29,300 pounds steam per day for power.

At a rate of 70 pounds steam per brake horse power for engine gives 29,300÷70 or 419 H.P. hours per day per donkey. This is for 10-hour operation. Reducing to K.W. hours at the very low motor efficiency of 70 percent, we have 445 K.W. hours input per day per 76,200 feet board measure logged, or 445÷76.2=approximately 6. K.W. hours per 1,000 feet board measure.*

The cost of this power if purchased from a supply company at a rate of 1.5 cents per K.W. hour is $6.68. With oil or wood fuel there is water to be pumped. Suppose we say that one pumping outfit burning three-fourths as much fuel as a logging engine can supply four logging outfits. If no pumping engine is used the amount of steam drawn from the logging engine will offset the apparent saving.

Then under similar conditions we have—

1—ELECTRIC OPERATION:

Power—445 KW. Hrs. @ 1.5c per KW. Hr.	6.68
1—operator	3.75
Total per day	$10.43

2—OIL FUEL:

8.8 Bbls. per day @ $1.05	$ 9.34
¼ of fuel cost pumping engine using ¾x8.8—6.6 Bbls. per day @ $1.05	1.75
¼ of pumping—engine man's time	.94
One engineer	3.75
Total operating cost, per day	$15.76

3—WOOD FUEL:

Average daily wood consumption 1650 Ft. B. M.	
Stumpage value	3.00 per M
Logging cost	4.00 per M
Additional cost for wood logs	.50 per M
Cost of wood used	$7.50 per M

Then as with oil the costs are:

Fuel 7.50x1,650	$12.38
One engineer	3.75
One fireman	3.00
One wood bucker	2.75
¼ of fuel cost of pumping engine ¼x¾x$12.38	2.32
¼ pumping engine man's time	.94
Total operating cost, per day	$25.14

The values given above may be easily changed to conform to any local conditions. If to the above are added the repair charges and depreciation costs the result will be more pronounced.

*This calculated value includes only the power for yarding. It does not include power for loading logs—nor, in case no engine is available, spotting cars.

THORPE BABCOCK, OF TACOMA, WASH.;
Secretary West Coast Lumber Manufacturers' Association.

Maintained Production and Voltage.

In the first part of this paper we touched on the question of production. In the average logging operation, it is conservative to allow at least 10 percent of the time of hauling in for delays due to low steam pressure; that is, either absolute shut downs or decreased speed because of low steam pressure. We saw that it took 15 minutes for the complete cycle of yarding one log scaling 1,900 feet. We will divide this time as follows:

1½ minutes haul back.
2 minutes attaching log.
9 minutes hauling in.
2½ minutes landing.

With the 10 percent delay eliminated we would have required for hauling in only eight minutes, or fourteen minutes for a complete cycle. This would give 42.7 trips per day as against 40, or a production of 2.7×1,900=5,160 feet board measure greater than was secured. The only cost of this is stumpage, which take at $3, with logs at $12, would yield a net additional profit of 5.160×($12—$3)=$46.45 per day. This is the value of maintained production. The maximum demand upon a power plant would, of course, be the same as the maximum demand of an individual outfit where only one engine was installed; but with an installation of several equipments—three or more—the maximum demand fast approaches the average value. Thus with an engine similar to a 11x13-inch machine not less than 300 kilowatts in transformers or generating station equipment should be provided but with, say, seven logging machines not more than 700 to 800 kilowatts would be required. This takes into consideration the diversity factor—one machine idle or lightly loaded when another is heavily loaded.

The voltage at which the logging motors receive power must be determined for each particular installation. A camp operating one or two equipments does not have the same problems to face as one operating twenty. So we have one company operating at 550 volts and another at 2,200 volts. Both transmit from their power stations at 11,000 volt 3-phase. The substation plans are again different, one operating an individual transforming station 11,000/600 volt for each outfit, the other a larger transforming station 11,000/2,400 volt which will supply all the outfits in one camp. Each has chosen the system best suited to the requirements of its operations considering both present and future needs. With the remarkable saving which can undisputably be effected by electric logging its greatest drawback has been its newness and the cost of changing over a system already installed and operating. Central station power has not always been available, necessitating a capital outlay in generation station equipment that has handicapped its wide adoption. Such expenditures have in past years been shown justifiable by the expected returns, and with the increasing network of transmission lines every day reaching out into new territory we may confidently look forward to the beginning of the era of electricity in the woods.

Following this paper, Mr. Donovan remarked that according to these papers—"electric logging has arrived." He then announced a ten minutes' recess and said that anyone tempted to leave should remember that the Scotch bard had promised a repetition of the musical treat of the previous day. Committees were urged to get together during the recess and lunch hour. He also spoke of the membership of the logging congress and said that heretofore anyone showing enough interest to attend and register was considered to be entitled to a vote. Now, however, the organization had reached a place where, while everyone is welcome to attend, it would appear that anyone interested enough to attend should become a member and contribute the $5 membership fee to the support of the congress.

The session was called to order again after recess at 11.50 and Dr. J. Chris O'Day, of Portland, Ore., was introduced. Mr. Donovan remarked that nothwithstanding Dr. O'Day was an Irishman the Scotch had allowed him to be put on the program, which under the circumstances was an honor indeed.

THE LOGGER'S FIRE BOX.

Dr. J. Chris O'Day, of Portland, Ore., Shows Importance of Good Food.

In asking me to address your congress, you confer on me an honor for which I am truly grateful. I realize, however, that personal attributes of myself did not influence you in the matter. What you wanted was one in touch with the knowledge you were seeking, and while I confess a personal pleasure, I must at the same time assure you of the appreciation I feel for the recognition you have accorded my profession. For to educate the laity in matters of public health is one of my profession's greatest ambitions.

Upon first glance, it might seem that the title of my address was lacking in dignity. To speak of one's stomach as a fire-box appears vulgar. There is, however, so great a similarity that the application will enable me to say just what I want to say without appearing too technical. Your congress, I believe, has for its purpose the bringing together the heads of the logging industry. Under your management is a great army of men to whom you must look for the successful carrying out of your plans. This army of men, without question, is your most valuable asset. Your interest in these men, as evidenced by your desire to surround them with a sanitary environment, even though it be under the unique caption of "The Logger's Fire-Box," reflects on you a credit that will be fully appreciated by all thinking men.

Just as the successful operation of your various steam plants depends upon a good fire-box under the boilers, so must these men be equipped with good stomachs. Good combustion is necessary in generating the steam that will drive the engine from which the energy to turn the wheels must come. For that reason you secure good fuel. Then you see to it that nothing happens to the fire-box wherein this fuel is to be consumed. You regulate the draft by tall stacks and adjustable furnace doors which enables the fireman to regulate the intake of air and all this to the purpose of keeping the plant alive; and I would have you realize that as good fuel is necessary to the needed energy of your plant, so will good food be necessary to your men. Imposing poor food into one's stomach is analogous to throwing poor fuel into a boiler's fire-box. This truth is back of our undignified title.

Men's Welfare a Factor.

If you would have the best there is in your men, you must interest yourselves in all that pertains to their welfare. You should know what food is best for them. Your hard working man needs a much more substantial food for his fire-box than the fellow in the office.

Ability to enjoy a meal, we refer to as appetite. A good appetite is splendid proof that the combustion is complete, and when the appetite is impaired by poor food or even by good food carelessly prepared, the result is bound to reduce the energy generating process of the machinery.

Scientific men have worked out tables giving the relative heat values of the various fuels, from the best grade of anthracite coal down to peat; the various petroleums, all have been made to yield to scientific research their hidden or stored-up energy. This knowledge is taken advantage of

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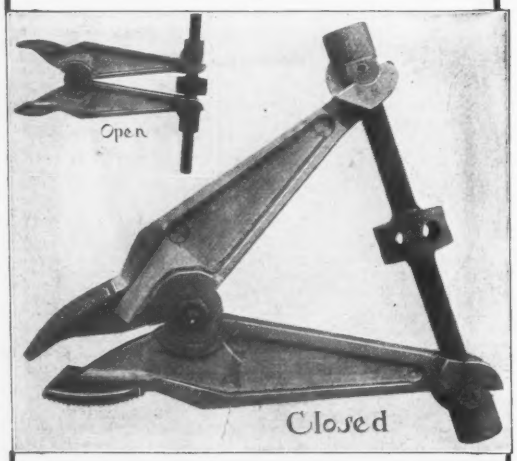

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wherever steam power is to be used. It has enabled the navies of the world to select coal containing the greatest number of heat units, and as the heat units of various fuels have been worked out, so have the values of the various foods yielded their heat units to the scientists who have interested themselves in the greater problem of human energy and endurance.

Classification of Foods.

Foods have been classified as proteins, carbohydrates and fats. These constitute the organic elements, while the inorganic are water and salts. The proteins contain one very important element; namely, nitrogen. This element is wanting in both fats and carbohydrates. The cells of our bodies are filled with a substance known as protoplasm and as this substance is albuminous, it is absolutely necessary that we consume a considerable quantity of nitrogenous food. All civilized nations now accept the fact that the best brain and muscle of the world are found in men who partake of animal as well as vegetable food.

The same as fuel, food possesses a varying amount of stored-up energy. This energy is set free in a body by cleavage, decomposition and fermentation, and manifests itself in heat, energy and muscular effort. Gautier says: "A full grown man in good health, weighing 150 pounds uses up each day about 500 grams of his flesh, or of other albuminous compounds which form his blood and tissues. He burns a part of his fat, sugars, starches and furnishes by their combustion and by that which his food puts at his disposal and his tissues supply him with, a quantity of energy which, calculated in heat units, amounts to about 2,400 calories in 24 hours." A calorie represents the amount of heat required to raise the temperature of one kilo of water one degree centigrade. It has been found that by burning in a calorimeter a measured amount of protein, carbohydrate and fat, a certain amount of heat was generated and expressed in heat units or calories, and therefrom the following deductions were made:

1 gram of protein furnishes .....4.1 calories
1 gram of carbohydrate furnishes .....4.1 calories
1 gram of fat furnishes .....9.3 calories

Table Showing Average Percentage of Protein, Fat and Carbohydrate in Some of the Common Articles of Food.

Averages—	*Protein.*	*Fat.*	*Carbohydrate.*
Meat	15.	19.	....
Fish	15.	1.5	....
Eggs	15.	0.2	....
Cheese	25.	30.	2.5
Milk	3.5	4.	5.
Butter	1.	85.	....
Bread	9.	2.	5.2
Potato	2.2	0.1	18.4
Vegetables	1.5	1.	8.
Pastry	7.	9.	65.
Fruit	1.	0.7	14.
Nuts	20.	25.	6.
Soup	2.5	1.5	5.

To compute the number of calories in any given article of diet from the table, move the decimal point two places from the left. This gives the value of one gram, the table being calculated from 100 grams.

Digestion.

Just as you exact care in the handling of fuel in the boilers by the firemen employed, should you exact care and caution from those who have charge of your food supply. The fireman must use whatever fuel the character of the boiler's fire-box demands. Should he fail in this, your plant will be unable to come up to its normal capacity. When your men are improperly fed, their stomachs filled with incombustible fuel, the same result must follow. They can not come up to their normal capacity for work.

The stomach should have at least five hours' rest between each meal. Men who work hard from 7 to 12 and from 1 to 5 or 6, should be made to observe this rule, for it will enable their digestion to complete the process without being crowded. Eating between meals forces the food of the previous meal out of the fire-box before its combustion is complete. This is a common cause of many of the so-called indigestions. The Fletcherizing fad has no place with practical thinking people.

Those who have to do with the operating of railroads have a hope that the day will come when wrecks will be a thing of the past. Since the inception of the railroads, science has been busy working out measures for the prevention of wreck and disaster. That the wreck and disaster which comes to human life by reason of disease, be likewise relegated to the past, medical science is giving its best men to the solving of the problem. As proof of this spirit, with your permission I will tell you of some of the achievements to which the profession points with considerable pride.

Sanitation a Preventative of Disease.

Some time ago we were told that the French government failed to complete the Panama Canal owing to lack of funds. In a way the statement was correct; but the lack of funds was due to the sickness and deaths among the men more than the actual work of the construction. It was not a great while after France had abandoned the project that scientific medicine discovered malaria fever to be due to a certain specie of mosquito. It was found that within the stomach wall of this particular mosquito there lived a male and a female parasite, that bred countless millions of sexless parasites, something after the manner a queen and drone bee breed a swarm of sexless workers. Now, when these sexless parasites enter one's blood through the bite of the insect, they begin a new life. They multiply by a process known as segmentation, or self-division. During this process of self-division we believe a certain poison to have been set free in the blood, and that its effect is characterized by a number of symptoms which we have recognized under the name of "malaria." The older observers were of the belief that the disease was due to the bad air, arising from the swamps; hence the term malaria, mal meaning bad, and aria, the air. In the light of our present knowledge, the name is a misnomer. However, it will be retained if for no other reason than to commemorate our years of ignorance in this particular. The same thing was found to be true of yellow fever, except that it was caused by a different kind of a parasite and came from a different variety of mosquito—but otherwise the process is identically the same.

How differently did our Government undertake to complete the Canal! Taking advantage of the knowledge medical science had given to the world relative to the role the mosquito played in yellow and malaria fever, the United States began the work by sending a corps of sanitary engineers and doctors into the Canal Zone for the purpose of waging a war, not only on the mosquito itself, but his breeding places as well.

Where swamps could be drained, they were; otherwise the surface of the water was covered with oil. All foliage obstructing the sunlight or retaining moisture was cut away. The result is a matter of record—Panama that for ages was a hot-bed of sickness and of death, is today one of the most delightful winter resorts among our possessions, with a tourist popularity second to none.

Sleeping sickness, a death-dealing disease of western Africa, has been traced to the tsetse fly. Bubonic and pneumonic plague has its origin in the rat and is transmitted to man by the rat flea.

The hook-worm disease of the South is due to a parasite known as the ground itch.

And right here in Idaho, Montana, eastern Washington and Oregon we have a form of infantile paralysis that is the result of a tick bite.

The stable fly has been tracked to its lair, wherein we found the source of that terrible disease, cerebro spinal meningitis; and the present slogan "swat the fly" is the answer to our having proof that this household pest is a transmitter of typhoid fever. But it is not enough to "swat the fly." We must get back to his breeding places. The young fly is a maggot. If you permit the keepers of your camps and your boarding houses to allow garbage accumulation, you are going to expose the dwellers of that particular community to unnecessary risk.

Outhouses must not be built over or near your streams, wells or springs. Instead, keep them away from the water and equip each with a portable wooden vault. This vault should be placed so as to exclude all light because flies are not attracted to dark places. Lime should be applied at frequent intervals, and when filled, the vault should be saturated with oil and destroyed by fire, a new one taking its place.

Remember that typhoid is usually traceable to a polluted water supply. Therefore, you should occupy a position wherein you can assure the fellow with the camp below yours that you are doing nothing to pollute his water supply. At the same time, be equally assured that the fellow with the camp above yours is exercising the same care.

If you have reason to be suspicious of a water supply, test the water for the presence of organic matter. If present the water is not safe unless boiled. The following test will be found both simple and effective:

To a glass of the suspected water, add one-fifth grain of permanganate of potash. This will turn the water a beautiful wine color. If at the end of one hour the color remains unchanged, the water is free from organic matter. If not, the color will have changed to a muddy brown.

Laundries Should be Established.

Environment, too, must not be lost sight of. Insist on cleanliness. The man who is careless in matters of personal cleanliness is a menace and you do not want him around. Blankets should be kept clean; underclothes washed and changed frequently. Unless this is closely observed, lice will be a disgusting feature of the camp. Laundries should be installed where, at little expense all rough clothing may be made clean.

The Tuberculosis Menace.

Keep all consumptives away. Tuberculosis is more contagious than leprosy. Remember, too, that it is a disease of indoor life. If you crowd your men into close sleeping quarters, you are inviting this dreadful disease. Have your sleeping apartments roomy and well ventilated. Sleeping out of doors being a great factor in the cure of tuberculosis, how necessary, then, plenty of pure, fresh, air must be in preventing its development. Breathing foul air lowers the resisting power of the blood by surcharging it with carbon dioxide, and while it is so lowered it is unable to prevent the germs of tuberculosis from establishing a lesion from which they ultimately destroy the life of the individual.

Bathing should be made popular. The skin, through its many sweat glands, is an organ of elimination. When the water of the sweat dries, it leaves the skin covered with a

DR. J. CHRIS O'DAY, PORTLAND, ORE.;
Who Praised Welfare Work.

film of waste material which, like all waste material, readily undergoes decomposition. Shower baths are ideal for men who work hard. A battery of such showers should be installed.

John Barleycorn has been tried, found guilty, and convicted of being one of man's greatest enemies. Alcohol is a curse and no one better than the physician knows the truth of this statement. It has no medicinal value in any disease. Its only value is in the weird imagination of its victims who are deceived by the stimulating effect of that bolstering drink. To my mind, many men take to alcohol because no one except the saloonman has taken the initiative in procuring for them a social environment. By nature all men are social beings, and it is to this alone that alcohol has succeeded financially. Give your men social environment and be sure it is one suited to their interests in life. Unless you do, you can not find fault when the fellow opens the nearby saloon.

Just as the science of my profession has traced many diseases to insect life, has it traced many more to the saloon. But while money continues to dominate our politics, the evil will continue not only to fill untimely graves with our men but by its hellish affiliation with commercialized vice, their daughters as well.

First Aid to the Injured.

Those of your men who are exposed to the risk of sharp tools, such as axes, saws etc. should be equipped with a first aid emergency package. An ax wound severing a large artery in one of the extremities should be treated promptly if death from loss of blood be prevented. If no such package is at hand a strip of cloth, torn if need be from a garment, should be tied around the member just above the cut and made tight enough with a twister to constrict the bleeding vessel.

If burns or scalds, the prompt application of sodium bicarbonate (ordinary baking powder) will allay the pain and put the parts in a good way for healing. Extensive burns or scalds of the surface have a high death rate. However, much can be done by placing the victim of such an accident in water. By adjusting an ordinary sheet so it sags within a few inches from the bottom of a bath tub, lay the patient, stripped, on this, submerging the whole body in water. This is to be his bed until he recovers. By virtue of his specific gravity, most of his weight will come on the water instead of the sheet. His comfort will then be assured and his chances for living greatly enhanced.

In fractures place a splint in such a manner as to prevent the broken ends of the bone grinding on each other. In fractures of the leg or thigh, a good splint may be improvised by rolling two sticks within the lateral margins of a sheet or blanket. As the two rolls approximate each other, they form a trough splendidly adapted for the reception of the injured limb. Bind this with whatever happens at hand and your patient may be transported in ease to the nearest physician or surgeon.

Venereal Diseases.

Venereal disease, it would seem, is a part of our social life. We find it in all classes. Wherein lies its source we know not. All we do know is that like the poor it is constantly with us. What the future holds as a reward for the present campaign of social hygiene, time alone will reveal. I would caution you, though, against the army of quacks who prey on this particular class of invalids. When the time arrives, and it is now in sight, that our newspapers refuse this class of advertisements, the lost manhood and venereal quack will be relegated to the junk heap of oblivion. As yet, we have no specific cure for gonorrhea. With syphillis, it is different. This disease we have mastered, but two to three years is necessary to effect the cure. Teach your men to take no chances under such conditions, but to secure the services of the best physician, one who will not make promises to suit their anxiety or their misguided desires.

This month we read of a disastrous wreck on a New England railroad which, according to investigation was due to an overworked engineer. Let me impress on you the fact that fatigue has a direct relation to many accidents and the employer must not forget that human energy like mechanical energy has its limitations.

A recent discussion brings out the part that fatigue plays in the hazard of industry, based on German insurance tables showing percentages of accidents during different hours of the working day. The article is as follows:

Many investigations of railroad and industrial accidents have demonstrated that fatigue or exhaustion from nerve and muscular strain not rarely has contributed to the inefficiency of workmen. While such incidents are not frequent, they serve to illustrate in depreciating the working capacity of the individual. The valuable point is clearly brought out in an address by one of our foremost sanitarians, Dr. Thomas F. Harrington, of Boston, published in a recent issue of the *Journal of the American Medical Association*. Dr. Harrington asserts with good reason that the factor of unnecessary fatigue has not received sufficient attention from the public. Professor Irving Fisher has told us that 5 percent of all persons in this country are fatigued to a degree sufficient to impair totally their working powers. This statement would indicate a serious economic loss and is therefore a subject of great concern not only to the toilers but to every individual, because needless fatigue may be prevented or counteracted.

Physicians who are familiar with industrial conditions have noticed that accidents in mills and other places occur with a clock-like regularity at certain hours of the day, and at a time when the workman is most apt to be tired. In German insurance tables this generally unknown fact is demonstrated mathematically as follows:

Time—	*Accidents percent.*
6- 7 A. M.	2.82
7- 8 A. M.	5.16
8- 9 A. M.	5.29
9-10 A. M.	6.04
10-11 A. M.	10.37
11-12 A. M.	10.31
12- 1 P. M.	3.81
1- 2 P. M.	4.84
2- 3 P. M.	6.73
3- 4 P. M.	8.07
4- 5 P. M.	7.65
5- 6 P. M.	8.48

Aside from this indisputable fact, the resistance to disease is positively reduced by recurring fatigue, the products of which are well understood by physicians as handicapping all the functions of the body. That the muscular system is especially reduced in efficiency is self-evident to the workman himself, who, however, regards himself as so inured to exercise demanded by his vocation, that neither he nor others realize the importance of counteracting its unfelt depreciating effects by simple measures at the disposal of all.

True Function of the Physician.

To many laymen, the practice of medicine is regarded as a sort of game by which certain remedies are dispensed for the various diseases, and there is a common notion that the great doctor is the one who has a corner, so to speak, upon many or all of the wonderful remedies. Nothing could be further from the truth. What is it, then, that constitutes a good doctor? To this I would answer—the man who has made himself familiar with the mechanism of the human body, its chemistry, its physiology, its temperaments; and, in addition, understands the character of the disease to an extent which will enable him to anticipate what it is he must guard against. To know the working of the human body in health enables the early recognition of disease.

Triumphs of Surgery.

Surgery, the highest art of scientific medicine, has accomplished much. Today, surgery has mastered a disease that heretofore has been accompanied with a gruesome mortality of 100 percent. I refer to cancer of the stomach. The surgeon's knife has conquered not only this disease but many others—gall stones, kidney stones, obstruction of the bowels, appendicitis, abscess of the brain, the lung—even to the transplantation of various tissues. All have been successfully dealt with by skilled surgery. Nothing in all the civilized world has ever accomplished what surgery has toward the relief of suffering and the prevention of untimely death, but while this is true, and while we point with reasonable pride to these achievements, we are not unmindful of the fact that surgery, too, has its grief. All who are graduates of medicine are not scientifically interested. To the profession clings a vast number of pretenders.

Surgery of today is prostituted by this class. All over the country there is an alarming amount of unnecessary operating, and the laity must be taught that there is a vast difference between this kind of operating and surgery. In this country is an army of pretenders that is extorting money from credulous people by the performance of these needless operations, and coupled with this is the system of commissions paid by many who pose as surgeons, and by this system, the unscrupulous doctors are advising operations for everything and anything because of the good markets for their wares.

In behalf of the honest and earnest profession which is struggling to free itself from this condition, I plead your assistance. The doctor who will sell his patient to a needless operation is no credit to himself or to his profession. Besides, he is a dangerous man to his community. The doctor who demands a part of the surgeon's fee in case of a necessary operation, will be governed by the size of the rebate more than the surgeon's ability. In this fight, the public must aid us.

If in your desire to give your men a better environment you have gleaned anything from my remarks that will assist you, I will feel that I have been well rewarded for my humble effort, and I also wish to thank you for the way you have honored my profession and myself.

Books referred to:
"What to Eat and Why."—Smith.
"Theories of Diet."—Bryce.
"Physiology of Alimentation."—Fischer.

At the conclusion of this address the meeting adjourned for lunch, as it was then past noon and other speakers on the program for this session were unable to be present.

pounds, which latter is above the breaking strain of 1¼ inch plough steel cable, the speed of handling has varied only between the limits of 187 feet per minute and 175 feet per minute, or 6.5 percent variation, while the torque has traveled through a range of 700 percent and all this without the operator moving a muscle. That is what maintain productions means. Consider the significance of that pull of 128,000 pounds. It is sufficient to accelerate a loaded freight train of 4,700 tons gross weight on a level track and bring it from standstill to the rope speed of 185 feet per minute in 10½ seconds time. If pulling in opposition it would equal the maximum combined pull of five Shay locomotives with 50 tons net each on the drivers.

These are the conditions we have prepared to meet. During such a cycle no distress has been shown, because our power supply has not been limited to the output of a boiler the size of which is limited. We have assumed the highest working speed for such heavy duty. Suppose the topography of the country demands a slower rope speed. Any speed for the above pulls from the standstill up to full speed can be obtained by means of the other points of control. So much for the motor's flexibility and capacity.

Accessories and Their Use.

During such a cycle no distress has been shown, because our power supply has not been limited to the output of a boiler the size of which is limited. We have assumed the highest working speed for such heavy duty. Suppose the topography of the country demands a slower rope speed. Any speed for the above pulls from the standstill up to full speed can be obtained by means of the other points of control. So much for the motor's flexibility and capacity.

The brake is of the automatic solenoid type. It applies itself whenever power is thrown off the outfit. A drum controller gives the necessary speed variation and also reverse rotation. Of necessity there must be slight burning at the contact fingers during the transition from one point to another. Proper inspection once a day to remove the burrs with emery cloth is all that is necessary. The contact pieces are easily removed for replacement and are inexpensive. The interior construction is similar to the controller used on street railway cars.

An automatic oil switch with an ammeter mounted on the cover serves to entirely disconnect the motor from the line for inspection or when a log becomes hopelessly jammed. When this switch is open the entire outfit is entirely disconnected from the line and may be handled and inspected as would be any other mechanical device composed of iron, copper, steel and brass. The ammeter presents to the operator a continuous indication of the exact work his machine is doing so that he may act accordingly. The switch is set by trial to trip out when the pull has reached the maximum value desired.

A motor-driven air compressor and reservoir provides for the signal whistle and also takes care of the pneumatically operated frictions. Thus the operator has complete control of the outfit with a minimum of exertion.

Special armored cable is made up in short lengths and connected together by a coupling that relieves the conductors of any strain in moving same. Similar cable is used for dredge work where it must often be submerged in water.

Substation Equipment and Electric Shock.

Substation equipment and its location will vary according to the conditions to be met. In the case of the Potlatch company and the C. A. Smith company we have the two extremes. In the first case, an individual portable substation for each logging engine; in the second, one stationary substation for each camp furnishing all the power used by the several engines. As much attention to suitable substation equipment has been given as to the logging motors themselves.

The question of liability to electric shock in operating the electric outfit has been presented in many ways, some worthy of consideration, some not. In such equipment all metallic parts which can be touched should be thoroughly grounded. This is the first step; then there can be no difference in potential between the operator and the grounded metallic parts and hence no shock. Should there occur a failure of the insulation the grounded frame of the motor would again protect the operator from shock. No current carrying parts can be touched while energized, for they are all enclosed by metal cases or frames and these frames are grounded.

Comparisons of Powers.

Comparative operation of the Potlatch equipments will be given in another paper at this meeting. We have no records of actual camp operations to show the power consumption in kilowatt hours per 1,000 feet board measure in skidding work. We have, however, other data which are absolutely accurate and which will enable us to arrive very closely at a figure which may be predicted. In steam operations using oil fuel, Mr. Van Orsdal presented last year a paper giving three records of operations. The average of these three shows:

Average fuel per day per donkey.....8.8 Bbls.
Average logs per day per donkey....76,200 Ft. B. M.
Average distance of yarding.....670 Ft.
Average size log.....1900 Ft. B. M.

The above shows an average time of 15 minutes per log yarded 670 feet. We will assume conditions favorable to power generation with this amount of oil, viz.:

Engine working 70% of time,
Delays 30%

This stipulation is made to insure that the demands for steam will not exceed the generating capacity of the boilers. In high grade stationary boilers with good settings, draft and other conditions favorable one pound of oil will evaporate about 14 pounds of water from and at 212 degrees F. This is under better conditions than can prevail in a logging camp. We will therefore assume that 11 pounds of water per pound of oil is the average performance. Then 8.8 barrels per day will give 11x8.8x336=32,500 pounds steam per day. Deducting only 10 percent for fuel during delays, blow-off, leaks, radiation etc., leaving net 29,300 pounds steam per day for power.

At a rate of 70 pounds steam per brake horse power for engine gives 29,300÷70 or 419 H.P. hours per day per donkey. This is for 10-hour operation. Reducing to K.W. hours at the very low motor efficiency of 70 percent, we have 445 K.W. hours input per day per 76,200 feet board measure logged, or 445÷76.2=approximately 6. K.W. hours per 1,000 feet board measure.*

The cost of this power if purchased from a supply company at a rate of 1.5 cents per K.W. hour is $6.68. With oil or wood fuel there is water to be pumped. Suppose we say that one pumping outfit burning three-fourths as much fuel as a logging engine can supply four logging outfits. If no pumping engine is used the amount of steam drawn from the logging engine will offset the apparent saving.

Then under similar conditions we have—

1—ELECTRIC OPERATION:		
Power—445 KW. Hrs. @ 1.5c		
per KW. Hr.		6.68
1—operator		3.75
Total per day		$10.43
2—OIL FUEL:		
8.8 Bbls. per day @ $1.05		$ 9.34
¼ of fuel cost pumping engine using ¾x8.8—6.6 Bbls. per day @ $1.05		1.75
¼ of pumping—engine man's time		.94
One engineer		3.75
Total operating cost, per day		$15.76
3—WOOD FUEL:		
Average daily wood consumption 1650 Ft. B. M.		
Stumpage value	3.00	per M
Logging cost	4.00	per M
Additional cost for wood logs	.50	per M
Cost of wood used	$7.50	per M
Then as with oil the costs are:		
Fuel 7.50x1,650		$12.38
One engineer		3.75
One fireman		3.00
One wood bucker		2.75
¼ of fuel cost of pumping engine ¼x¾x$12.38		2.32
¼ pumping engine man's time		.94
Total operating cost, per day		$25.14

The values given above may be easily changed to conform to any local conditions. If to the above are added the repair charges and depreciation costs the result will be more pronounced.

*This calculated value includes only the power for yarding. It does not include power for loading logs—nor, in case no engine is available, spotting cars.

THORPE BABCOCK, OF TACOMA, WASH.;
Secretary West Coast Lumber Manufacturers' Association.

Maintained Production and Voltage.

In the first part of this paper we touched on the question of production. In the average logging operation, it is conservative to allow at least 10 percent of the time of hauling in for delays due to low steam pressure; that is, either absolute shut downs or decreased speed because of low steam pressure. We saw that it took 15 minutes for the complete cycle of yarding one log scaling 1,900 feet. We will divide this time as follows:

1½ minutes haul back.
2 minutes attaching log.
9 minutes hauling in.
2½ minutes landing.

With the 10 percent delay eliminated we would have required for hauling in only eight minutes, or fourteen minutes for a complete cycle. This would give 42.7 trips per day as against 40, or a production of 2.7×1,900=5,160 feet board measure greater than was secured. The only cost of this is stumpage, which take at $3, with logs at $12, would yield a net additional profit of 5.160×($12—$3)=$46.45 per day. This is the value of maintained production. The maximum demand upon a power plant would, of course, be the same as the maximum demand of an individual outfit where only one engine was installed; but with an installation of several equipments—three or more—the maximum demand fast approaches the average value. Thus with an engine similar to a 11x13-inch machine not less than 300 kilowatts in transformers or generating station equipment should be provided but with, say, seven logging machines not more than 700 to 800 kilowatts would be required. This takes into consideration the diversity factor—one machine idle or lightly loaded when another is heavily loaded.

The voltage at which the logging motors receive power must be determined for each particular installation. A camp operating one or two equipments does not have the same problems to face as one operating twenty. So we have one company operating at 550 volts and another at 2,200 volts. Both transmit from their power stations at 11,000 volt 3-phase. The substation plans are again different, one operating an individual transforming station 11,000/600 volt for each outfit, the other a larger transforming station 11,000/2,400 volt which will supply all the outfits in one camp. Each has chosen the system best suited to the requirements of its operations considering both present and future needs. With the remarkable saving which can undisputably be effected by electric logging its greatest drawback has been its newness and the cost of changing over a system already installed and operating. Central station power has not always been available, necessitating a capital outlay in generation station equipment that has handicapped its wide adoption. Such expenditures have in past years been shown justifiable by the expected returns, and with the increasing network of transmission lines every day reaching out into new territory we may confidently look forward to the beginning of the era of electricity in the woods.

Following this paper, Mr. Donovan remarked that according to these papers—"electric logging has arrived." He then announced a ten minutes' recess and said that anyone tempted to leave should remember that the Scotch bard had promised a repetition of the musical treat of the previous day. Committees were urged to get together during the recess and lunch hour. He also spoke of the membership of the logging congress and said that heretofore anyone showing enough interest to attend and register was considered to be entitled to a vote. Now, however, the organization had reached a place where, while everyone is welcome to attend, it would appear that anyone interested enough to attend should become a member and contribute the $5 membership fee to the support of the congress.

The session was called to order again after recess at 11.50 and Dr. J. Chris O'Day, of Portland, Ore., was introduced. Mr. Donovan remarked that nothwithstanding Dr. O'Day was an Irishman the Scotch had allowed him to be put on the program, which under the circumstances was an honor indeed.

THE LOGGER'S FIRE BOX.

Dr. J. Chris O'Day, of Portland, Ore., Shows Importance of Good Food.

In asking me to address your congress, you confer on me an honor for which I am truly grateful. I realize, however, that personal attributes of myself did not influence you in the matter. What you wanted was one in touch with the knowledge you were seeking, and while I confess a personal pleasure, I must at the same time assure you of the appreciation I feel for the recognition you have accorded my profession. For to educate the laity in matters of public health is one of my profession's greatest ambitions.

Upon first glance, it might seem that the title of my address was lacking in dignity. To speak of one's stomach as a fire-box appears vulgar. There is, however, so great a similarity that the application will enable me to say just what I want to say without appearing too technical. Your congress, I believe, has for its purpose the bringing together the heads of the logging industry. Under your management is a great army of men to whom you must look for the successful carrying out of your plans. This army of men, without question, is your most valuable asset. Your interest in these men, as evidenced by your desire to surround them with a sanitary environment, even though it be under the unique caption of "The Logger's Fire-Box," reflects on you a credit that will be fully appreciated by all thinking men.

Just as the successful operation of your various steam plants depends upon a good fire-box under the boilers, so must these men be equipped with good stomachs. Good combustion is necessary in generating the steam that will drive the engine from which the energy to turn the wheels must come. For that reason you secure good fuel. Then you see to it that nothing happens to the fire-box wherein this fuel is to be consumed. You regulate the draft by tall stacks and adjustable furnace doors which enables the fireman to regulate the intake of air and all this to the purpose of keeping the plant alive; and I would have you realize that as good fuel is necessary to the needed energy of your plant, so will good food be necessary to your men. Imposing poor food into one's stomach is analogous to throwing poor fuel into a boiler's fire-box. This truth is back of our undignified title.

Men's Welfare a Factor.

If you would have the best there is in your men, you must interest yourselves in all that pertains to their welfare. You should know what food is best for them. Your hard working man needs a much more substantial food for his fire-box than the fellow in the office.

Ability to enjoy a meal, we refer to as appetite. A good appetite is splendid proof that the combustion is complete, and when the appetite is impaired by poor food or even by good food carelessly prepared, the result is bound to reduce the energy generating process of the machinery.

Scientific men have worked out tables giving the relative heat values of the various fuels, from the best grade of anthracite coal down to peat; the various petroleums, all have been made to yield to scientific research their hidden or stored-up energy. This knowledge is taken advantage of

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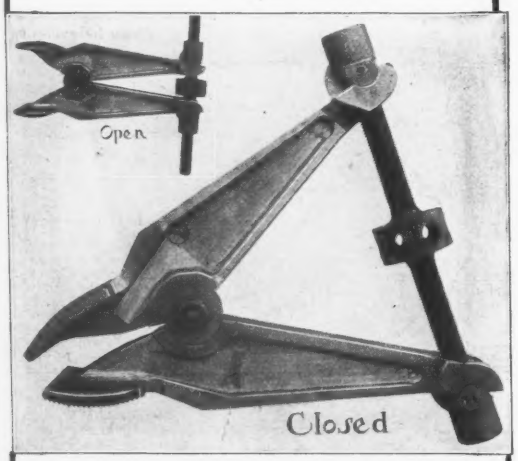

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wherever steam power is to be used. It has enabled the navies of the world to select coal containing the greatest number of heat units, and as the heat units of various fuels have been worked out, so have the values of the various foods yielded their heat units to the scientists who have interested themselves in the greater problem of human energy and endurance.

Classification of Foods.

Foods have been classified as proteins, carbohydrates and fats. These constitute the organic elements, while the inorganic are water and salts. The proteins contain one very important element; namely, nitrogen. This element is wanting in both fats and carbohydrates. The cells of our bodies are filled with a substance known as protoplasm and as this substance is albuminous, it is absolutely necessary that we consume a considerable quantity of nitrogenous food. All civilized nations now accept the fact that the best brain and muscle of the world are found in men who partake of animal as well as vegetable food.

The same as fuel, food possesses a varying amount of stored-up energy. This energy is set free in a body by cleavage, decomposition and fermentation, and manifests itself in heat, energy and muscular effort. Gautier says: "A full grown man in good health, weighing 150 pounds uses up each day about 500 grams of his flesh, or of other albuminous compounds which form his blood and tissues. He burns a part of his fat, sugars, starches and furnishes by their combustion and by that which his food puts at his disposal and his tissues supply him with, a quantity of energy which, calculated in heat units, amounts to about 2,400 calories in 24 hours." A calorie represents the amount of heat required to raise the temperature of one kilo of water one degree centigrade. It has been found that by burning in a calorimeter a measured amount of protein, carbohydrate and fat, a certain amount of heat was generated and expressed in heat units or calories, and therefrom the following deductions were made:

1 gram of protein furnishes .....4.1 calories
1 gram of carbohydrate furnishes .....4.1 calories
1 gram of fat furnishes .....9.3 calories

Table Showing Average Percentage of Protein, Fat and Carbohydrate in Some of the Common Articles of Food.

Averages—	*Protein.*	*Fat.*	*Carbohydrate.*
Meat	15.	19.	....
Fish	15.	1.5	....
Eggs	15.	0.2	....
Cheese	25.	30.	2.5
Milk	3.5	4.	5.
Butter	1.	85.	....
Bread	9.	2.	5.2
Potato	2.2	0.1	18.4
Vegetables	1.5	1.	8.
Pastry	7.	9.	65.
Fruit	1.	0.7	14.
Nuts	20.	25.	6.
Soup	2.5	1.5	5.

To compute the number of calories in any given article of diet from the table, move the decimal point two places from the left. This gives the value of one gram, the table being calculated from 100 grams.

Digestion.

Just as you exact care in the handling of fuel in the boilers by the firemen employed, should you exact care and caution from those who have charge of your food supply. The fireman must use whatever fuel the character of the boiler's fire-box demands. Should he fail in this, your plant will be unable to come up to its normal capacity. When your men are improperly fed, their stomachs filled with incombustible fuel, the same result must follow. They can not come up to their normal capacity for work.

The stomach should have at least five hours' rest between each meal. Men who work hard from 7 to 12 and from 1 to 5 or 6, should be made to observe this rule, for it will enable their digestion to complete the process without being crowded. Eating between meals forces the food of the previous meal out of the fire-box before its combustion is complete. This is a common cause of many of the so-called indigestions. The Fletcherizing fad has no place with practical thinking people.

Those who have to do with the operating of railroads have a hope that the day will come when wrecks will be a thing of the past. Since the inception of the railroads, science has been busy working out measures for the prevention of wreck and disaster. That the wreck and disaster which comes to human life by reason of disease, be likewise relegated to the past, medical science is giving its best men to the solving of the problem. As proof of this spirit, with your permission I will tell you of some of the achievements to which the profession points with considerable pride.

Sanitation a Preventative of Disease.

Some time ago we were told that the French government failed to complete the Panama Canal owing to lack of funds. In a way the statement was correct; but the lack of funds was due to the sickness and deaths among the men more than the actual work of the construction. It was not a great while after France had abandoned the project that scientific medicine discovered malaria fever to be due to a certain specie of mosquito. It was found that within the stomach wall of this particular mosquito there lived a male and a female parasite, that bred countless millions of sexless parasites, something after the manner a queen and drone bee breed a swarm of sexless workers. Now, when these sexless parasites enter one's blood through the bite of the insect, they begin a new life. They multiply by a process known as segmentation, or self-division. During this process of self-division we believe a certain poison to have been set free in the blood, and that its effect is characterized by a number of symptoms which we have recognized under the name of "malaria." The older observers were of the belief that the disease was due to the bad air, arising from the swamps; hence the term malaria, mal meaning bad, and aria, the air. In the light of our present knowledge, the name is a misnomer. However, it will be retained if for no other reason than to commemorate our years of ignorance in this particular. The same thing was found to be true of yellow fever, except that it was caused by a different kind of a parasite and came from a different variety of mosquito—but otherwise the process is identically the same.

How differently did our Government undertake to complete the Canal! Taking advantage of the knowledge medical science had given to the world relative to the role the mosquito played in yellow and malaria fever, the United States began the work by sending a corps of sanitary engineers and doctors into the Canal Zone for the purpose of waging a war, not only on the mosquito itself, but his breeding places as well.

Where swamps could be drained, they were; otherwise the surface of the water was covered with oil. All foliage obstructing the sunlight or retaining moisture was cut away. The result is a matter of record—Panama that for ages was a hot-bed of sickness and of death, is today one of the most delightful winter resorts among our possessions, with a tourist popularity second to none.

Sleeping sickness, a death-dealing disease of western Africa, has been traced to the tsetse fly. Bubonic and pneumonic plague has its origin in the rat and is transmitted to man by the rat flea.

The hook-worm disease of the South is due to a parasite known as the ground itch.

And right here in Idaho, Montana, eastern Washington and Oregon we have a form of infantile paralysis that is the result of a tick bite.

The stable fly has been tracked to its lair, wherein we found the source of that terrible disease, cerebro spinal meningitis; and the present slogan "swat the fly" is the answer to our having proof that this household pest is a transmitter of typhoid fever. But it is not enough to "swat the fly." We must get back to his breeding places. The young fly is a maggot. If you permit the keepers of your camps and your boarding houses to allow garbage accumulation, you are going to expose the dwellers of that particular community to unnecessary risk.

Outhouses must not be built over or near your streams, wells or springs. Instead, keep them away from the water and equip each with a portable wooden vault. This vault should be placed so as to exclude all light because flies are not attracted to dark places. Lime should be applied at frequent intervals, and when filled, the vault should be saturated with oil and destroyed by fire, a new one taking its place.

Remember that typhoid is usually traceable to a polluted water supply. Therefore, you should occupy a position wherein you can assure the fellow with the camp below yours that you are doing nothing to pollute his water supply. At the same time, be equally assured that the fellow with the camp above yours is exercising the same care.

If you have reason to be suspicious of a water supply, test the water for the presence of organic matter. If present the water is not safe unless boiled. The following test will be found both simple and effective:

To a glass of the suspected water, add one-fifth grain of permanganate of potash. This will turn the water a beautiful wine color. If at the end of one hour the color remains unchanged, the water is free from organic matter. If not, the color will have changed to a muddy brown.

Laundries Should be Established.

Environment, too, must not be lost sight of. Insist on cleanliness. The man who is careless in matters of personal cleanliness is a menace and you do not want him around. Blankets should be kept clean; underclothes washed and changed frequently. Unless this is closely observed, lice will be a disgusting feature of the camp. Laundries should be installed where, at little expense all rough clothing may be made clean.

The Tuberculosis Menace.

Keep all consumptives away. Tuberculosis is more contagious than leprosy. Remember, too, that it is a disease of indoor life. If you crowd your men into close sleeping quarters, you are inviting this dreadful disease. Have your sleeping apartments roomy and well ventilated. Sleeping out of doors being a great factor in the cure of tuberculosis, how necessary, then, plenty of pure, fresh, air must be in preventing its development. Breathing foul air lowers the resisting power of the blood by surcharging it with carbon dioxide, and while it is so lowered it is unable to prevent the germs of tuberculosis from establishing a lesion from which they ultimately destroy the life of the individual.

Bathing should be made popular. The skin, through its many sweat glands, is an organ of elimination. When the water of the sweat dries, it leaves the skin covered with a

DR. J. CHRIS O'DAY, PORTLAND, ORE.;
Who Praised Welfare Work.

film of waste material which, like all waste material, readily undergoes decomposition. Shower baths are ideal for men who work hard. A battery of such showers should be installed.

John Barleycorn has been tried, found guilty, and convicted of being one of man's greatest enemies. Alcohol is a curse and no one better than the physician knows the truth of this statement. It has no medicinal value in any disease. Its only value is in the weird imagination of its victims who are deceived by the stimulating effect of that bolstering drink. To my mind, many men take to alcohol because no one except the saloonman has taken the initiative in procuring for them a social environment. By nature all men are social beings, and it is to this alone that alcohol has succeeded financially. Give your men social environment and be sure it is one suited to their interests in life. Unless you do, you can not find fault when the fellow opens the nearby saloon.

Just as the science of my profession has traced many diseases to insect life, has it traced many more to the saloon. But while money continues to dominate our politics, the evil will continue not only to fill untimely graves with our men but by its hellish affiliation with commercialized vice, their daughters as well.

First Aid to the Injured.

Those of your men who are exposed to the risk of sharp tools, such as axes, saws etc. should be equipped with a first aid emergency package. An ax wound severing a large artery in one of the extremities should be treated promptly if death from loss of blood be prevented. If no such package is at hand a strip of cloth, torn if need be from a garment, should be tied around the member just above the cut and made tight enough with a twister to constrict the bleeding vessel.

If burns or scalds, the prompt application of sodium bicarbonate (ordinary baking powder) will allay the pain and put the parts in a good way for healing. Extensive burns or scalds of the surface have a high death rate. However, much can be done by placing the victim of such an accident in water. By adjusting an ordinary sheet so it sags within a few inches from the bottom of a bath tub, lay the patient, stripped, on this, submerging the whole body in water. This is to be his bed until he recovers. By virtue of his specific gravity, most of his weight will come on the water instead of the sheet. His comfort will then be assured and his chances for living greatly enhanced.

In fractures place a splint in such a manner as to prevent the broken ends of the bone grinding on each other. In fractures of the leg or thigh, a good splint may be improvised by rolling two sticks within the lateral margins of a sheet or blanket. As the two rolls approximate each other, they form a trough splendidly adapted for the reception of the injured limb. Bind this with whatever happens at hand and your patient may be transported in ease to the nearest physician or surgeon.

Venereal Diseases.

Venereal disease, it would seem, is a part of our social life. We find it in all classes. Wherein lies its source we know not. All we do know is that like the poor it is constantly with us. What the future holds as a reward for the present campaign of social hygiene, time alone will reveal. I would caution you, though, against the army of quacks who prey on this particular class of invalids. When the time arrives, and it is now in sight, that our newspapers refuse this class of advertisements, the lost manhood and venereal quack will be relegated to the junk heap of oblivion. As yet, we have no specific cure for gonorrhea. With syphillis, it is different. This disease we have mastered, but two to three years is necessary to effect the cure. Teach your men to take no chances under such conditions, but to secure the services of the best physician, one who will not make promises to suit their anxiety or their misguided desires.

This month we read of a disastrous wreck on a New England railroad which, according to investigation was due to an overworked engineer. Let me impress on you the fact that fatigue has a direct relation to many accidents and the employer must not forget that human energy like mechanical energy has its limitations.

A recent discussion brings out the part that fatigue plays in the hazard of industry, based on German insurance tables showing percentages of accidents during different hours of the working day. The article is as follows:

Many investigations of railroad and industrial accidents have demonstrated that fatigue or exhaustion from nerve and muscular strain not rarely has contributed to the inefficiency of workmen. While such incidents are not frequent, they serve to illustrate in depreciating the working capacity of the individual. The valuable point is clearly brought out in an address by one of our foremost sanitarians, Dr. Thomas F. Harrington, of Boston, published in a recent issue of the *Journal of the American Medical Association*. Dr. Harrington asserts with good reason that the factor of unnecessary fatigue has not received sufficient attention from the public. Professor Irving Fisher has told us that 5 percent of all persons in this country are fatigued to a degree sufficient to impair totally their working powers. This statement would indicate a serious economic loss and is therefore a subject of great concern not only to the toilers but to every individual, because needless fatigue may be prevented or counteracted.

Physicians who are familiar with industrial conditions have noticed that accidents in mills and other places occur with a clock-like regularity at certain hours of the day, and at a time when the workman is most apt to be tired. In German insurance tables this generally unknown fact is demonstrated mathematically as follows:

Time—	*Accidents percent.*
6- 7 A. M.	2.82
7- 8 A. M.	5.16
8- 9 A. M.	5.29
9-10 A. M.	6.04
10-11 A. M.	10.37
11-12 A. M.	10.31
12- 1 P. M.	3.81
1- 2 P. M.	4.84
2- 3 P. M.	6.73
3- 4 P. M.	8.07
4- 5 P. M.	7.65
5- 6 P. M.	8.48

Aside from this indisputable fact, the resistance to disease is positively reduced by recurring fatigue, the products of which are well understood by physicians as handicapping all the functions of the body. That the muscular system is especially reduced in efficiency is self-evident to the workman himself, who, however, regards himself as so inured to exercise demanded by his vocation, that neither he nor others realize the importance of counteracting its unfelt depreciating effects by simple measures at the disposal of all.

True Function of the Physician.

To many laymen, the practice of medicine is regarded as a sort of game by which certain remedies are dispensed for the various diseases, and there is a common notion that the great doctor is the one who has a corner, so to speak, upon many or all of the wonderful remedies. Nothing could be further from the truth. What is it, then, that constitutes a good doctor? To this I would answer—the man who has made himself familiar with the mechanism of the human body, its chemistry, its physiology, its temperaments; and, in addition, understands the character of the disease to an extent which will enable him to anticipate what it is he must guard against. To know the working of the human body in health enables the early recognition of disease.

Triumphs of Surgery.

Surgery, the highest art of scientific medicine, has accomplished much. Today, surgery has mastered a disease that heretofore has been accompanied with a gruesome mortality of 100 percent. I refer to cancer of the stomach. The surgeon's knife has conquered not only this disease but many others—gall stones, kidney stones, obstruction of the bowels, appendicitis, abscess of the brain, the lung—even to the transplantation of various tissues. All have been successfully dealt with by skilled surgery. Nothing in all the civilized world has ever accomplished what surgery has toward the relief of suffering and the prevention of untimely death, but while this is true, and while we point with reasonable pride to these achievements, we are not unmindful of the fact that surgery, too, has its grief. All who are graduates of medicine are not scientifically interested. To the profession clings a vast number of pretenders.

Surgery of today is prostituted by this class. All over the country there is an alarming amount of unnecessary operating, and the laity must be taught that there is a vast difference between this kind of operating and surgery. In this country is an army of pretenders that is extorting money from credulous people by the performance of these needless operations, and coupled with this is the system of commissions paid by many who pose as surgeons, and by this system, the unscrupulous doctors are advising operations for everything and anything because of the good markets for their wares.

In behalf of the honest and earnest profession which is struggling to free itself from this condition, I plead your assistance. The doctor who will sell his patient to a needless operation is no credit to himself or to his profession. Besides, he is a dangerous man to his community. The doctor who demands a part of the surgeon's fee in case of a necessary operation, will be governed by the size of the rebate more than the surgeon's ability. In this fight, the public must aid us.

If in your desire to give your men a better environment you have gleaned anything from my remarks that will assist you, I will feel that I have been well rewarded for my humble effort, and I also wish to thank you for the way you have honored my profession and myself.

Books referred to:
"What to Eat and Why."—Smith.
"Theories of Diet."—Bryce.
"Physiology of Alimentation."—Fischer.

At the conclusion of this address the meeting adjourned for lunch, as it was then past noon and other speakers on the program for this session were unable to be present.

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FRIDAY AFTERNOON SESSION.

Friday afternoon's session opened at 1:45 with a return engagement of the ladies who had furnished the music the day before. If there was any such thing as taming "savage loggers" they surely would yield to the beautiful singing of Mrs. Freeze and Miss Allen, who were again accompanied by Mrs. Langley. In deference to the chairman and because of his special request on the day before, there was no dearth of Irish melodies. In fact when Mr. Strathern was called on to sing, as it was said by very unanimous and special request, he promised to attempt to sing an Irish song himself, but compromised when the time came by singing "Paddle Your Own Canoe." "Auld Lang Syne" with everybody standing and joining in the chorus finished the musical entertainment.

Thorpe Babcock, secretary of the West Coast Lumber Manufacturers' Association, Tacoma, while not on the program, was given the opportunity of telling the loggers what the lumber manufacturers propose doing to advertise lumber to the consumer and other ways, hoping to enlarge the market for their product, which would be of as great benefit to the timber owner and logger as it would to the millman if it accomplished its purpose of creating a steadier and more staple price for their product.

The title of Mr. Babcock's address was "Effect on Stumpage Holdings of Changing Market Conditions in the Lumber Industry."

STUMPAGE VALUES.

By Thorpe Babcock, of Tacoma, Wash., Secretary West Coast Lumber Manufacturers' Association.

Proceeding on the comfortable and satisfactory theory that lumber is a staple commodity for which the demand will always exceed the supply, the lumber industry, as a whole, including the holders of timberlands, has been generally content (as long as it has held the supply of raw material and the facilities for manufacturing it into commercial shapes) to let the market for the product take care of itself. During the last 20 years, however, there has been a rapidly growing change in conditions, which puts an entirely different complexion on the situation. No less an authority than the Forest Service Bureau of the United States Government is sponsor for the statement, in effect, that the sawmills now existing in the United States will never again operate at their full capacity and that the production of other materials, which may be used as substitutes in conditions for which lumber had previously been the only material considered, has been brought to such a point that it will from now on act as a governing brake on the demand for lumber of all kinds and consequently on the price which lumber can command. We have only to look at the conditions which exist today in the largest lumber producing sections of the United States to find ample material for some interesting studies in this line.

In the face of a generally good business condition, of constantly enlarging building activities, and of a fair average amount of construction and equipment by the railways of the country, all of which should produce a normal and healthy condition in the lumber industry, we find the largest lumber producing sections in a condition of gloom and discouragement, with mills shutting down by the score, in whole or in part, with productive pressure falling off to an alarming point and with demand and prices demoralized.

Granting that these conditions at this time are only temporary, that the demand and the proper value expressed by price will again assert themselves, is it not true that these disturbing conditions are recurring at more frequent intervals in the lumber industry, and do not the experiences of the last few years show an increasing difficulty in stablizing and maintaining steady market conditions through the industry?

The "Why" of Existing Conditions.

Why should these conditions exist? We have the timber; we have the mills; our manufacturing facilities as a whole are better and more economical than they ever have been. We want to sell the lumber and have the facilities to produce it. What is the matter with the market? Assume that these conditions of decreasing demand and consequent weakness in price continue to recur more and more frequently, and at shorter intervals just as they have been doing, until that condition should become the permanent condition, what would be the effect on the value of the timber holdings of the country? Recognizing that there is no one factor, however important it may be, which absolutely and by itself alone controls the market for any important commodity, and that particularly in any temporary situation there are many influences which bring about a given condition, it is manifest, and is recognized by all thoughtful lumbermen who have given any study to the subject, that there is one extremely important factor which is having a constantly depressing effect on the lumber market.

That factor is the constantly increasing and developing use of materials other than lumber for purposes for which wood has previously been solely in demand and the lack of new fields of use for wood to offset the other losses. A great deal of this loss for the market of lumber by the use of the so-called substitutes is perfectly in line with progress and evolution, a source of economies and benefits to the public and not to be questioned for a moment by any reasonable man. It is, however, equally true that an enormous portion of this loss in the use of lumber is due to an artificially sustained condition founded on false promises and which works an economic injury to the people, as well as being eventually destructive to the lumber industry if permitted to continue and develop as it has been.

Influence of Modern Advertising.

This artificial market condition is produced by influencing public sentiment with the force and suggestion of modern advertising. No man would be senseless enough to question the desirability and economic value of steel for the construction of modern skyscrapers, for the building of great bridges, or question the value of the use of reinforced concrete for foundations for such structures, for the construction of great sea-walls and other forms of massive masonry construction. But when the people as a whole are led to believe that they can not build a house, or a barn, or a silo, or a boat, or a railroad without using these materials, or similar materials, and that the use of lumber for such purposes is improper, it certainly seems time to call a halt. And yet this is precisely what is happening. Exactly this kind of a sentiment has been studiously and carefully cultivated for years. Naturally the growth of it has been slow. It has been an educational process and it takes a long time effectively to educate great masses of the people, but it has steadily been making headway and gaining ground.

Naturally with the slow beginning of this education, before the effects began to be successfully produced and exert large influences, the lumber industry did not feel the pressure. The industry today, however, is feeling that pressure very keenly, and it will feel it more keenly until the industry itself awakens to the fact that the selling of anything, lumber or any other product, requires not only productive and manufacturing capacity and skill, but a market, and that if competitive products are marketed by methods which force lumber out of its accustomed markets, lumber must, in order to live, adopt methods which will overcome the loss and extend and develop its markets in other channels. In many channels of use where wood of one species or another would be economically more valuable—would be a better "buy," other products are today being used at a premium and lumber can not be sold at any price for such uses simply because the buyer has been educated into the idea, whether it is true or not, that the competing material is better for his purpose. The reason for that is that while every competing industry has been educating the consumer in this manner, employing that great modern weapon—advertising—to do it, the lumber industry has, as a whole, (with some rare and shining exceptions) been content to quietly and calmly await developments while its market was gradually but surely being undermined.

This is a big subject. Many more men in the lumber industry appreciate its magnitude today than those who appreciated it four or five years ago. To appreciate how big a subject it is, get a statement prepared by A. T. Gerrans, Houma, La., chairman of the advertising committee of the National Lumber Manufacturers' Association, showing an actual check of the amounts being spent for display advertising alone for the promotion of so-called substitutes for lumber in which the conclusion shows that under the most conservative estimate that can be made, $6,500,000 a year is being spent for this purpose, and good authorities estimate that the total expenditures are from eight to ten times that sum per annum.

Extension of Market by Advertising.

There are many other factors bearing on the situation other than the mere advertising of the so-called substitutes and which directly bear on the possibilities of the extension of the market for lumber. What can be done in this direction is probably best illustrated in the success of the advertising campaign conducted by the cypress manufacturers of the South and in many other less conspicuous, but equally successful, cases where the advertising of certain species of lumber has proven an enormous aid in marketing the goods. It is impossible in the limits of this paper to go into details of what may be accomplished in this direction and of what the results must almost inevitably be to the lumber manufacturer and the timber holder if the present artificial market conditions are allowed to continue and develop without any action by lumbermen.

Wherever the lumber manufacturer by scientific, associated effort and methods and determination has utilized aggressively the powerful weapon of advertising to defend, develop and extend his market, the effort has been thoroughly rewarded. And wherever this has been done it has, of course, as a natural consequence, redounded as much, if not more, to the benefit of the timber holder, both in the present and for the future, as it has for the lumber manufacturer. It requires little imagination to see that the interests of the lumber manufacturer and the timber holder in this connection are identical. If the lumber manufacturer can not continue to make and sell lumber at a reasonable profit, certainly the timber holder can not continue to sell timber at a reasonable profit. The mere possession of the timber is of no value if a market can not be obtained for it. That market is gradually being restricted and narrowed with a constant dwindling of the possibilities of profit.

The West Coast Lumber Manufacturers' Association has now set in motion the machinery for developing the market for the products of the members of this association by providing the sinews for an advertising campaign which it is fully believed will prove effective and profitable. This can hardly fail to be good news to the timber holders and loggers of the west coast, because whatever will advance and promote the market and profits for the mills of the association must of necessity promote the values and profits of the timber holders who supply the raw material on which these mills operate.

Following Mr. Babcock, W. W. Peed, Eureka, Cal., submitted the following report for the committee on standardization of logging tools, which was endorsed:

REPORT OF STANDARDIZATION COMMITTEE.

Due to the inability of the committee to have sufficient number of meetings this work was not carried on as rapidly or as far as we had hoped to do, the committee practically only taking up the question of blocks.

For trip blocks we recommend the adoption of five different sized blocks with sheaves, as follows:

9"x1¼"x1 15/16" hub length 3";
12"x1¼"x1 15/16" hub length 3";
14"x1½"x2 7/16" hub length 3";
18"x1½"x2 7/16" hub length 4";
24"x2 "x3 7/16" hub length 5".

All of the above blocks to be grooved for ¾" line.

Yarding Blocks.

10"x2"x2 7/16" 3" hub; grooved for 1¼" line;
12"x2½"x2 15/16" 3½" hub; grooved for 1½" line.

Butt Chain Blocks.

16"x8"x3 7/16" 8" hub;
20"x8"x3 7/16" 8" hub;
24"x8"x3 7/16" 8" hub.

All of the above sheaves, if grooved for line, to take 1½" line.

We recommend that a copy of this report be mailed to the different rigging manufacturers and that they submit to the committee detailed drawings of the pins and shackles that they propose using in the above blocks, and that the committee develop from the information furnished a standard pin for each block so that the sheaves and pins and shackles of blocks of the different manufacturers will be interchangeable.

We further recommend that a committee be appointed to carry on the work started by this committee and suggest that they consider classification and adoption of standard drawings for clevises, wire rope sockets, swivels and if possible, hooks, or such other tools as in their judgment should be considered. It is also suggested that in view of the promiscuous use of the words "guaranteed" and "warranted" wherever possible to establish specifications or reasonable mechanical tests that this be done and that the P. L. C. guarantees or definition of the word "guarantees" be interpreted in accordance with these specifications.

We would also recommend that a committee of the logging engine manufacturers be appointed and suggest that they take up the following items:

1. Definition of the term "speed" so that all manufacturers may figure this in the same manner.
2. Uniform formula for figuring rope capacity of drums to be adopted.
3. Ratio capacity of trip line drum as compared with main drum should be uniform. Capacities of straw line drum should be determined.
4. Standard equipment in the way of fair leads, spark arresters, tools, etc., should be uniform as to equipment furnished with new engine.
5. Careful consideration of the various parts of machines should be given with the idea of getting up a dictionary of engine parts and terms.

The question of increasing labor efficiency was referred to as a big one with every wideawake manager and superintendent of any kind of a plant or operation by John P. Van Orsdel, of Portland, Ore., in an address on the "Merit System or Increased Labor Efficiency."

INCREASING LABOR EFFICIENCY.

Discussion of a Big Problem with Illustrations and Suggestions by J. P. Van Orsdel, of Portland, Ore.

Increasing labor efficiency has been a question, and a big one with every wideawake manager and superintendent of any kind of a plant or operation for the last few years, and should have been a particularly interesting subject to those of us engaged in the lumbering and logging business and its allied interests, during the past five years, when the chances of making a profit depended on the most careful management, and it was a question, most decidedly of looking after the pennies and, if there were any dollars—they would take care of themselves.

Very likely market conditions, under which we have been laboring for the last five years, have been a good thing for us, in that it has made us get down to brass tacks in trying to reduce our cost of production to the minimum, and in this way keep the proverbial "two jumps ahead of the sheriff." So far as I know we have tried to do this by improving our machinery, equipment, and methods. But have we given the "human element" in our operations the proper amount of attention, or have we just let this take care of itself—figuring, that dissatisfied and unsatisfactory labor was all we could expect to get and so the only thing to do was to do the best we could with what we had, and call that good enough? And, by the way, it has not only been restless and unsatisfactory labor, but overpaid labor, considering the amount of efficiency we have been getting out of it.

My cost information advises me that 65 to 70 percent of our total cost of production is paid to labor and 30 to 35 percent for supplies, depreciation and overhead expense; and we have gone ahead and let the big expense get away from us, and devoted the greater part of our attention to improving our machinery and methods, which only represent one-third of our cost, and let the two-thirds rest by the wayside, when both should have received attention in the proportion that one bears to the other.

Do not for one minute think that I have not considered what we have all been doing, as an essential—because it is; but haven't we been putting the cart before the horse? Unsatisfactory machinery and methods will not get you logs any more than dissatisfied labor will. Satisfied labor and proper equipment go hand-in-hand, and are inseparable.

The good lumber-jack (with the accent on the good) is a type by himself. In my experience—handling all kinds of labor—I consider the western woodsman the finest type of laborer I have ever known. Generous to a degree, fearless, loyal to the company and interested in his work if properly treated, and his enthusiasm is aroused.

But I have found, and I think you all have found the same conditions to exist—there are not enough good loggers to go round, and so this condition compels us to draw on some other source of supply.

Attract Brains and Ambition.

Why not conduct our business in such a way that we will attract the higher class of labor instead of the scum? Why not attract men with brains and ambitions—instead of men who lack both, and only work because they are compelled to, and only go to work in the morning—because they are driven and work under the driver's lash all day—and their greatest longing and desire is either to see 6 o'clock come, or hold on until they get a road stake.

If we had been the latter type of men, would we be attending the logging congress today? No, we would be working on the section.

I think our effort and aim should be to fill our works full of ambitious men, whose ambitions and determinations are to hold our positions some day. And I can say, without fear of contradiction, that the sooner our organizations are filled up with this type of men, the sooner we will be able to retire and give some of them a show to fill our positions.

Waste, to me, of any description, is wicked, whether it be natural resources, supplies, or human effort. Beyond all question, the greatest waste in the world today is misapplied, misdirected, or useless human effort. It does no one any good, neither the employer, whose net income is reduced, nor the employee, whose chances of increasing his earning capacity are small.

To my mind the key to all schemes for bettering our labor situation is to install some system, whereby you arouse the ambitions of your employees, either to make more money—and save it, or to climb up in the world to a position of more responsibility and authority.

Community Interest the Ideal Organization.

The ideal labor organization is the organization where both the employer and employee are the members, and where their interests are and should be mutual. It is of importance and interest to the employee to see that this employer makes money, and it is a certainty that the employer can not pay good wages and supply proper and safe equipment unless every employee makes some money for the employer. In other words, the proper relation between the employer and employee should be standard pay for standard output, which standards should give the property owners the profit they are entitled to, and beyond this standard point then the excess profit should be divided between the two—the employer and the employee—in relation to what they are giving the business—or more concisely, standard wages for standard work, plus additional pay for additional effort.

In any merit or bonus system that may be adopted, the employer, being the most powerful and the dictator as to what the system should be, must bear in mind that fair play must be practiced at all times. Sharp practice will bring about the reverse result of what you expect. The only cases that I know of where the bonus system has not been a decided success is where the company has tried to take advantage of the laborer; not so much with the idea of being unfair, but because they had not properly analyzed their labor situation before they installed the system, and as a result, have set standards so far below what they should have been, that the men made enormous premiums; or, set them so high that there was no use of them even making an effort to attain the standard.

The Tentative Effort.

In order to work out any system of bonuses successfully, you must first have a very good idea what to expect. With this idea in mind, about two years ago I started in our camps a prize or competitive system which was worked out as follows:

In the camp where we were operating three sides, and the conditions at all times were practically the same, I hung up a prize for the crew which got the greatest output in a month.

In the other camps where conditions were changing all of the time a standard was set for each crew each month, and if they reached this standard or ran over it they each received prize money.

With this system in use in the year 1912, and by keeping close records on the output under the different conditions which we were working under, we were able to judge fairly well what a yarding crew could do under pressure, and I made it a point to have a camp foreman in each camp who would keep them working under pressure all of the time if they showed any tendency to slow up.

I knew all of the time we were working under this scheme that it was not what we intended finally to use, but it was an effort to establish standards which would be fair to us and still not be an injustice to the men.

As a result of my observations during the last year, at the first of this year I installed the system we are using now. The simplest way I know of to explain the system to you is to read you the rules, which are posted in the camps for the men's information:

Motto—Fair play for both the employer and employee.

Aim—After the employer has received an output sufficient to pay a reasonable profit for the risk entailed and a return on the money invested in plant, timber etc., our intention is that the employer and employee share the profit beyond this point.

Result—Increased efficiency in all departments of the work and greater earning capacity both for the employer and employee. With this arrangement our interests are mutual. The greater the output, the greater each of our incomes. A permanent organization.

General Rules.

(1) No employee will receive any premium for his first month's work unless he came to our employ before the 7th of the month.

(2) If an employee leaves our service before the 15th of the month and has not worked eighteen days in the previous month, he will not be entitled to any premium; but, if he has been in our service eighteen days or over in the preceding month and it is after the 15th of the succeeding month before he leaves our service, he will be entitled to his share of the premium.

This premium will not be paid at the time of his leaving our service on the basis of the standing of the yarders at that time, but will be computed at the end of the month on the basis of the time he was at work, and the premium check will be forwarded to his address, which he must leave with the bookkeeper or time keeper. This is not put in with the idea of doing anyone an injustice but simply justice to those who stay when the going is bad.

To illustrate: Suppose yarder No. 1 had an exceptionally good show for the first fifteen days of the month, and it was apparent would only just about hold up to the standard during the rest of the month, due to the timber or ground not being so good, a man who was not square might quit, which would undoubtedly not be fair either to his fellow workmen or employer.

(3) The daily wages you were receiving January 1 will be your wages during the entire year. It is up to you should a man's wages exceed $6 a day he would only be paid as though he was receiving $6.

(5) The scale will be made according to the scale rule that has been in use at this operation in the past.

The logs will be scaled by a man selected by the employer, but the employees have the right to call in a scaler and check up the employer's scaler's scale, if they are not satisfied; and if the two can not agree they can select a third man, whose decision will be final, and expense for these different scalers will have to be borne by the employees.

Any logs lost along the road will be back scaled against the yarder that lost them, and no credit will be given with the same.

(6) The crews must go out when ordered by the foreman; if they do not—the day will be charged up against them as a yarding day.

J. P. VANORSDEL, PORTLAND, ORE.;
Who Spoke on "Profit Sharing."

(7) Allowance for lost time will be made for delays beyond your control when they exceed one-quarter day. But no credit for lost time will be allowed for delays of a few minutes which occur now and again in any logging operation, or to be more explicit, we will not pay premium on logs we do not get.

Overtime.

(8) In order to make it fair for all parties concerned, the rigging crews will be limited as to amount of overtime.

On a basis of twenty-five working days a month the rigging crews will be allowed twenty-eight days; twenty-six working day month, twenty-nine days; twenty-seven working day month will be allowed thirty days.

This overtime will be based on the time shown on the books for four men in each crew as follows: Hook-tender, head rigging rustler, second rigging rustler, and first choker setter. No overtime limit will be put on the donkey engineers loaders and train crews, only within the judgment of the camp foreman.

(9) The premium will apply to all men engaged in handling the logs from the time they are felled and bucked until they are in the water.

It will not apply to buckers and fallers, nor men engaged in railroad construction or rollway construction, nor railroad maintenance.

The shop men will be put in the same class as train men.

The shop men entitled to premium will be as follows: Machinist and helpers, blacksmith and helpers, car knocker and repairer, oil and tool house man, and pump men.

(10) The standard output will be changed for each rollway, as the ground conditions and the stand of timber will not permit us to make a standard that could remain for any length of time the same, and be fair.

The Plan.

At the first of the month this standard for each rollway and the number of the yarder that is to work them will be posted in a prominent place in the camp, where everyone will see what they have to beat before they will be entitled to a premium.

The standard will be arrived at in the following manner: The camp foreman will advise the hook-tenders what rollways they are expected to log, considerably in advance of the time they are expected to begin work on them; and also show them definitely the boundaries of the logging areas that come to each rollway, and the manner in which they are planned to be logged.

It will be the duty of the hooktender as the representative of the crew to look over his shows ahead so that he can pass good judgment as to the amount of output a day he can get; and we expect and feel certain that all of our hooktenders will play fair both with themselves, their crews and us.

After the hooktenders, the camp foreman and the superintendent have all advised themselves as to what they think should be the standard for the rollway in question, they will meet and each put down on a slip of paper what he thinks should be the standard for the rollway in question, and the average of these three estimates will be standard, and for every thousand feet that each yarder gets beyond this point, figured at the end of the month, each man will receive premiums.

Results.

To put it in a formula it would be stated as follows: "Standard wages for standard output—plus 2 cents per dollar day earned for men engaged in work with each yarder."

Men receiving the following pay per day will receive the premium per thousand feet set opposite their respective amount:

$6.00 per day or over..	12 c per thousand feet
5.50 per day.....	11 c .....
5.00	10 c .....
4.75	9½c .....
4.50	9 c .....
4.25	8½c .....
4.00	8 c .....
3.75	7½c .....
3.50	7 c .....
3.25	6½c .....
3.00	6 c .....
2.75	5½c .....
2.50	5 c .....
2.25	4½c .....
2.00	4 c .....

To illustrate: If yarder No. 1 for April landed in the water 2,400,000 feet of logs, and as this is a twenty-six day month the standard would be perhaps 2,200,000; then all the men in the crew who have met with the above requirements would receive their usual wages, plus a premium on 200,000 feet of logs—or, for instance a man whose rate of wages was $3.50 per day would be entitled to a premium of $14.

Train Crews.

As this is a two-yarder camp, the train men and the shop men will have to be paid on a different basis, but the conditions are the same, only it will be based on combined output from the two yarders.

The following standard will apply for men receiving the following pay per day and they will receive the premium per thousand feet set opposite their respective amounts, in addition to their regular pay:

$5.00 per day.....	5 c per thousand feet
4.50	4½c .....
4.25	4 c .....
4.00	4 c .....
3.75	3½c .....
3.50	3½c .....
3.25	3½c .....
3.00	3 c .....
2.75	2½c .....
2.50	2½c .....

To illustrate: Suppose each yarder showed at the end of the month that they were 200,000 feet ahead each of the standard output, then train men would be paid their premium on the basis of 400,000 feet; or, suppose a man in the train service was receiving $4 per day, his premium would be $16, which would be added to his regular pay.

Suggestions Appreciated.

Any suggestion that will increase our output that any member of any of the crews has to offer either to the foreman or to myself will be given due consideration, and will be installed and tried out, if we think it meritorious. Our interests are mutual, so let us get together.

We have accomplished some wonderful results with this system, not only in the way of increased output, but we have a better satisfied and more efficient organization.

We have one yarder at our Cathlament camp which yarded in twenty-six days in August, 3,299,000 feet or approximately an average of 127,000 feet a day. The standard was 120,000 feet a day.

Effect on Output.

Yarder No. 1 at our Rinearson camp has averaged 98,500 feet a day for every yarding day in the year since the camp was opened, while last year under the prize system, which was in vogue, the machine only averaged 84,000 feet per day for the year.

At the Gray's River camp the yarders this year have consistently beaten all last year's records, in every way and any way you might figure.

We have an organization which we feel is with us all of the time from morning till night; and why shouldn't they be? We have made partners out of them. Increased output means increased pay.

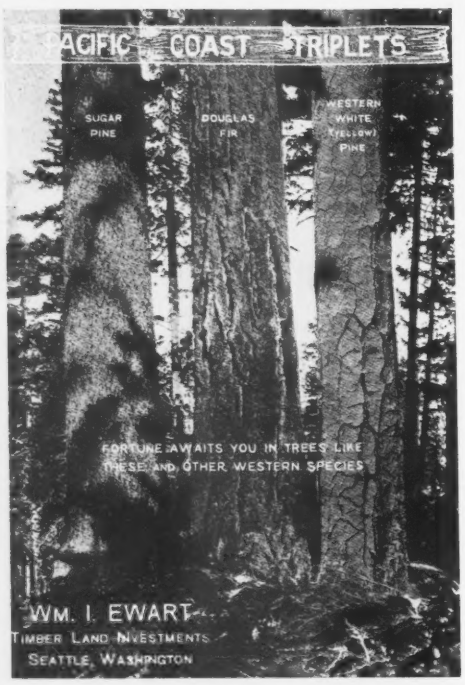
Everyone in camp is interested in the bucking board, on which board is shown exactly the standing of the yarders up to date, whether they have premium money coming or not.

A man of any importance around the camp who does not deliver the goods in every way becomes very unpopular with the rest of the men, as every bad move he makes touches their pocket; and you know when you touch a man's pocket, you touch his heart.

There are merit systems, bonus systems, prize systems and piece work systems, and they all have their good points, and it is a subject that volumes could be written about, so I am going to relieve you by a summing up of the results that can be attained with some sort of a merit system, properly applied:

(1) Increased labor efficiency.
(2) A satisfied crew, whose heart is with you.
(3) Elimination of I. W. W. and labor union troubles.
(4) Better paid labor.
(5) A better class of employees.
(6) Much increased output.
(7) Last but not least, the point we are all after—decreased logging cost.

Following this address the Chair introduced E. S. Grammer, Seattle, Wash., to discuss the same topic. Mr. Grammer is one of the big loggers of the Coast and although he had not prepared an address he told, in a very interesting way, the experience of his company—the Browns Bay Logging Company—with the bonus system. He said the subject was such a large one that if he had started to prepare a paper on it he never would have been able to finish it, and he hated to start anything he could not finish. He said there are many ways of profit sharing, but many of them are not applicable to the logging business. For instance the United States Steel Company had been referred to as issuing stock to its employees. That is a good plan for that concern, which can maintain a price for its products and guarantee dividends. This is not possible in the lumber business. In regard to the logging or lumber business, he said he would rather discuss the bonus system. For twenty-six years, he declared, he had tried to learn something about the logging business and he believed the thing that counts most is good team work among the crews. He believed in a simple system of rewards for good results. Any bonus system must vary in different camps, as conditions are so different and therefore have to take a different base according to the chance. For example, in his company's camps a month is considered a unit for a crew and the base in one is fixed at 800,000 feet. In another camp where conditions are not so favorable the base is fixed at



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600,000 feet. For loading an additional thousand feet the employees are paid the bonus amounting to a percentage of their salaries according to the amount of each. The record of the month before is not taken into consideration at all. He has had this plan in use since February 1, and finds that it creates good team work and keeps all of the men interested.

Last year H. C. Clair had appointed a committee to investigate plans for securing better efficiency from the men. This bonus system was one of the results of that system, Mr. Grammer said. As is always the case in such instances the loggers did not take kindly to the method at first and some of them quit, but time has shown them the advantages in the sysem and they are now more than satisfied with it. He said he believed any bonus system that would increase team work among the crew was a step in the right direction. He said he had received many inquiries regarding the use of this system and one letter objecting to the plan and insisting that it was establishing a bad precedent and would tend to increase accidents in the camps. Mr. Grammer could not agree with the writer of this letter and said he believed the system had come to stay.

Mr. Donovan called Mr. Young to the platform again, apologizing for the jocular way in which he had introduced him before when he spoke of his as the "Hon. J. D. Young, better known as Jim." Mr. Young said he accepted the apology and since the chairman had done such a poor job of introducing him on both occasions he would introduce himself. He said he started in the business, living in a bunk house and he had always had the interest of the men at heart. Living with them as long as he had he knew how they thought, how they arrived at their thoughts and how they expressed their thoughts. As there were ladies present he would not demonstrate the latter. He said that when he was one of them the boys knew what it cost to log, they knew what the stumpage cost, what it cost to tow the rafts etc., and they thought they knew what the operator got for his logs. This was where they were mistaken. When they asked for a raise the camp was closed down because it had been losing money. He thought that one of the causes of trouble between employer and employee was that the employer does not keep in close enough touch with his men and let them know what he is getting for his product. Mr. Young then read the following paper on "Improvement of the Man as Well as the Machine":

IMPROVING THE MAN.

A Talk by J. D. Young, of Kelso, Wash., on the Necessity for Treating Labor Fairly.

At our last annual meeting held in Tacoma our vice president, Frand H. Lamb, told us that when a man was called on to talk before the Logging Congress and had nothing of particular interest to say, his talk should be called an address. But when called upon to say something of importance upon an important subject it should be termed reading a paper.

Now, gentlemen, I feel that the talk I am to give you today should be called an address, though not for want of a subject or subjects to talk about, for my friend, George Cornwall, is full of subject ideas. He has from time to time suggested subjects to discuss: Logging engineering, systems of loading logs, fuel oil in the donkeys, steam shovels for building logging roads, how to get greater efficiency in the camp, or is the bonus system to employees a paying investment, the bath house in the camp and, lastly, the Y. M. C. A. in the camp, or does the logger make a good Sunday school boy?

Now, gentlemen, these several subjects I have mentioned are all right; they are all good subjects and to do justice to any one of them would make a lengthy paper and to do half justice to all of them would take more of your time than any one person should occupy; yet they are all important and each one of them represents one step in the evolution of the logging industry on this coast, which evolution since the organization of this congress five years ago has been going on at a pace much faster than ever before.

During the progress of the evolution we have seen the old ox team and the skid road relegated to the scrap heap; the old-time bull-puncher has sung his swan song; the horse team is used only occasionally now in logging; the spool donkey and spool tender are only matters of history.

Today we seldom log the timber into the mountain stream and either wait for a winter freshet to bring the logs to market or create artificial floods by means of dams to hold the water in storage, so that when released a flood will be produced to carry the logs to deep water where they can be put up into rafts of convenient size for towing to the mill. Go into the camp today, if you please, and the first thing to greet your ears is the scream of the locomotive whistle, the rumble of the logging train or the intermittent blasts from the whistle of the donkey engine.

Nor has the evolution confined itself to the introducing of new machines. We have been constantly spending thousands of dollars to improve the designs, power and speed of these machines. We are now using larger donkeys, heavier locomotives, cars of greater capacity; are using heavier rail, building better roads and are changing our methods in nearly every particular. We now yard the logs up hill instead of down hill, as formerly. We formerly loaded our logs on the cars with jack screw and peavy; later we found a better way—par-buckled them up with a line from the gypsy head on the engine, running through a block alongside the cars opposite the rollway. Now we use a specially designed engine, high ginpoles, crotch lines and blocks galore, also the overhead trolley line.

The unloading of the logs has undergone a similar change. Now we have the high ginpole, the projecting boom, the tilting dump, the merry-go-round or the traveling crane that travels alongside the loaded cars and unloads them at the rate of about one car per minute, and—like the farmer who formerly rode to town in the old farm wagon, and later afforded the luxury of a carriage, and now sports an automobile and is dreaming of a flying machine—the logger is trying to get off the ground with his logging operations. He is in some instances transporting his logs on the overhead trolley, he is yarding them with the skidder and skyline, and while these systems are in a measure in the experimental or development stage, I believe they are sure to become popular, particularly on very rough steep ground. And I have no doubt that electricity will do a large part in the transportation of logs from the woods to the mill in the future.

Now, while we have been bending all our energies toward securing new and better equipment, have spent money with a lavish hand for the latest and best machinery of all kinds, it is only very recently that we have given much thought to the educating and training of men especially for the business of logging. But one year ago, at our annual meeting, the sentiment of getting better men for the logging business found expression in a resolution from which I quote the following:

"This congress pledges its hearty support and best efforts to the creation of the profession of logging engineering as a distinct branch of mechanical science, and its coöperation in the endeavor of the different universities to create a department of logging engineering.

"We believe that the timbered States and Provinces of the West should make liberal appropriations for the adequate equipment and proper maintenance of logging engineering courses and for the securing of the highest type of educators for furthering the work."

Committees were appointed to the end that courses in logging engineering in some one of the educational institutions in California, Oregon, Washington, Idaho, Montana and British Columbia, be established. In my own State—Oregon—the board of regents have adopted such a course in the Oregon Agricultural College at Corvallis. And while we are handicapped for want of a suitable building and proper equipment for the course as outlined, the legislature having refused to make special appropriation for this purpose at its last session, liberal provision for the permanent maintenance of the university has been made on a milage basis and the college at Corvallis should have ample funds for this work in the near future.

And so we have begun to look and provide for increased efficiency in the man by special education and training for the gigantic task of harvesting the forest crop of this western coast, a crop so large and valuable that if the crop in the State of Oregon alone were harvested and sold at the nominal price of $10 a thousand feet lumber measure it would net more than five billions of dollars, or more than twice the amount of our nation's debt. And yet there are those who say all that is required to make a good logger is a strong back and a pair of willing hands. But in the future, gentlemen, brains will count for more than muscle. And for this reason I am in favor of giving attention to the man as well as to the machine, for by so doing I believe we are to get better results.

I firmly believe that the workmen's compensation law as we have it in the State of Washington is a step forward in the matter of improving the personnel of the men who work in the logging camp and sawmill. It promotes better relations between the employer and employee. Formerly when an employee was injured in the camp or mill, perhaps through his own carelessness or the fault of a fellow employee, the negligence of his employer or through the inherent risk of the occupation, there immediately arose a feeling of resentment on the part of the other employees who felt that this poor fellow was hurt while doing his duty and that in some manner the employer should compensate him for his injuries and loss of time and if the employer failed to pay him liberal damage, enmity and animosity grew up between employee and employer. The angry glances, the low mutterings, the seeming unwillingness of the men to return to work after serious accidents are to me evidence of the temper of the men after a serious accident, even though the accident occurred through no fault of the company. And I have noticed that the output of the camp has seriously decreased for a considerable time after a bad accident occurring that I could attribute to no other cause than the dissatisfaction of the employees. And I think, gentlemen, that a good many of you will bear me out in the statement that this principle of compensation for injured employees has also had a pretty firm hold on the average juror and as a consequence the employer has generally been mulcted for pretty heavy damages and these damages have been getting heavier year by year. And while the payment for personal injury damages has been heavy the poor employee has received but a small portion of the amount the employer was compelled to pay. Court expenses and the ambulance-chaser ate up the major portion.

The employer to protect himself bought liability insurance from some reliable casualty company. If his horse got injured, however, he sent for a veterinary, put the horse in a good warm stable, gave him the best of care and kept him under full pay (that is three meals a day and a good bed) and nursed him back to health in the shortest possible time that he might get the benefit of his services.

Note the difference when the man was injured. Though he may have had a large family dependent upon him, he was bundled off to the hospital and his case turned over to the tender mercies of the casualty company for settlement. Not that the average employer is hard-hearted or heartless—not at all; he may even be a philanthropist. But he was forced to do just about this thing on account of the system under which we were operating.

But under our compensation law the injured employee seeks the aid of his employer to help him get his claim in proper form that he may receive the compensation to which he is entitled and at a time he needs it most and without expense or unnecessary trouble on his part, instead of going to the ambulance chaser to get damages to which often he is not entitled.

And thus the law for compensating injured employees while a little more expensive than our old system, has to my mind improved the relation of employer and employee to such an extent I feel it is worth all it has cost and even more. And if employers in general will take the proper interest in their employees in administering it and in helping them get the compensation to which they are justly entitled, by making our reports promptly, seeing to it that the witnesses' reports and the doctor's certificate are in the hands of the industrial commission without unnecessary delay, I feel that it can be made a pretty good antidote against the I. W. W. sentiment that has obtained such a firm foothold among the working men.

My motto is keep in close touch with your men and outside of working hours meet them on the level.

Another feature I wish to speak of briefly, is the Y. M. C. A. in the camp. Laying aside all religious sentiment; as I know there are many here today who will be asking the question of themselves: Will the Y. M. C. A. in the camp help pay dividends? With a great big question mark after the word dividends. I feel that I can not do better here than give you my experience with the Y. M. C. A. in the Inman-Poulsen Logging Company's plant and leave it to you to draw your own conclusions.

Seven years ago in the spring of 1906, when I took charge of this camp, it was what you might term a wide open camp. I have seen a hundred gallons of beer come into the camp in one week. I was never able to get a check on the amount of booze of other descriptions. There was no restriction on bringing in liquor of any kind. About one-third of the crew was drunk on Sunday, and every Monday morning there was trouble to get enough sober men to start the camp.

This state of affairs continued until the panic in November, 1907. At that time we began trying to keep liquor out of the camp but were not always successful. But since we put the Y. M. C. A. in the camp in March of the present year, I have not seen a single drunken man in the camp. Liquor has been brought into the camp a few times but we now have practically no trouble with the booze question. We are attracting a better class of men to the camp.

We were shut down during the entire month of June on account of the high water in the Columbia River; started up the camp on the first day of July, had our Fourth of July celebration right in the camp and not a man intoxicated. Started up again on Saturday, July 5, and out of a crew of about 170 men we had in May, we lost so few that we had to add only nineteen new names during July. So I will answer the question: Does the Y. M. C. A. in the camp pay? by asking another: Does it pay to have a steady, sober and contented crew?

Is it any wonder when we take the boys from the farm or small town where they have had some social privileges, down into the camp where they have nothing of this kind, that their social nature is starved and when they get out of the camp and to the town or city, they start out to have a frolic which frequently ends in a drunken debauch? Our loggers are not a bad lot of fellows but they get into

trouble, as a rule, for the want of some better means to employ their time.

Now, in conclusion, I want to say that while we have housed and fed our loggers well, we have started the intellectual, moral and religious side of their nature. And that to our own detriment and loss. I believe that the establishment of the Y. M. C. A. in the camp is one step in the social evolution of the lumberjack whereby the logger of the future is to be a sober and respected citizen and the old-time booze-fighter is to be relegated to the scrap-pile in the same manner as the antiquated piece of machinery which no longer serves a useful purpose. And while I love the oldtime lumber jack with all his faults, with all his shortcomings, with all his vices—love him for his liberality, his hospitality, his honesty and sincerity of purpose (which purpose is often to get drunk whenever the opportunity offers), I welcome the change whereby the logger, the lumberjack of the future, is to become a higher type of manhood.

A. E. Cook, of Vancouver, B. C., was introduced as the inventor of an ingenious device for measuring the diameters of trees at any height. Mr. Donovan said that in his own recent experience when his company had wanted to buy an especially good claim they had had it cruised three times respectively at 12,000,000, 15,000,000 and 20,000,000 feet and each time it was cruised by a reliable cruiser. Where these cruisers differed was in the diameter of the trees at certain heights. Mr. Cook explained that his instrument gave the exact diameter of a tree at 30, 60 and 120 feet heights. The instrument is for use in making a very careful and accurate cruise or for determining the average taper of trees in a certain locality.

Monorail System Explained.

The Chair also allowed five minutes to Messrs. J. E. Riley and George T. Lewis, the promoter and inventor, respectively, of a monorail system which they were of the opinion will be practical in logging operations, especially over rough ground. The principal point in this system was that the equipment is balanced on the rail by means of compressed air.

Mr. Donovan announced that thirty-nine new members had been added to the roll since morning and then called a fifteen-minute recess.

F. A. Silcox, of Missoula, Mont., in his address on the "Appraisal of National Forest Timber," said:

APPRAISAL OF GOVERNMENT TIMBER.

By F. A. Silcox, of Missoula, Mont.—Government Immune to Charge of Favoritism.

Recognizing the fact that in the final analysis stumpage is worth what it will bring on the open market, Congress in the enabling Act of June 4, 1897, authorized the Secretary of the Interior and later the Secretary of Agriculture to sell timber, provided that in all sales of $100 and over the timber should be advertised and sold under competitive bids. This action safeguards the interests of the Government, opens the timber to any one who wishes to compete in its purchase, and protects the administrative officers from charges of favoritism. An excerpt in point from the act reads:

> For the purpose of preserving the living and growing timber and promoting the younger growth on forest reservations, the Secretary of the Interior, under such rules and regulations as he shall prescribe, may cause to be designated and appraised so much of the dead, matured, or large growth of trees found upon such forest reservations as may be compatible with the utilization of the forests thereon, and may sell the same for not less than the appraised value in such quantities to each purchaser as he may prescribe, to be used in the State or territory in which such timber reservation may be situated, respectively, but not for export therefrom.
>
> (Before such sale shall take place notice thereof shall be given * * * for not less than thirty days, by publication in one or more newspapers of general circulation, as he may deem necessary, in the State or territory where such reservation exists; Provided, however, That in cases of unusual emergency the Secretary of the Interior may, in the exercise of his discretion, permit the purchase of timber and cordwood in advance of advertisement of sale at rates of value approved by him and subject to payment of the full amount of the highest bid resulting from the usual advertisement of sale: Provided, further, That he may, in his discretion, sell without advertisement, in quantities to suit applicants, at a fair appraisement, timber and cordwood not exceeding in value $100 stumpage: And provided, further, That in cases in which advertisement is had and no satisfactory bid is received, or in cases in which the bidder fails to complete the purchase, the timber may be sold, without further advertisement, at private sale, in the discretion of the Secretary of the Interior, at not less than the appraised valuation, in quantities to suit purchasers:) * * * Such timber before being sold shall be marked and designated, and shall be cut and removed under the supervision of some person appointed for that purpose by the Secretary of the Interior, not interested in the purchase or removal of such timber nor in the employment of the purchaser thereof. Such supervisor shall make report in writing * * * of his doings in the premises. (*Manual of Laws*, pps. 6 and 7.)

The reason for permitting small bodies of timber valued at less than $100 to be sold without advertisement is to eliminate delay and make such small sales responsive to the needs of ranchers, settlers, miners, and the like.

Providing for Competitive Bidding.

Theoretically, it would seem that, under the method outlined in the Act, all that it should be necessary to do in administrative practice is to locate the body of timber, approximate the amount, determine roughly its quality, and then by comparison with the bodies of timber of approximately similar accessibility and quality which have been sold on private holdings to fix a minimum price in the advertisement of the timber and let competition finally determine the real market value. Such a simple plan, however, does not work out, for two good reasons: first, competition is not to be secured in the majority of cases, and, second, the sale price of private stumpage can not be taken as a criterion of the value of national forest stumpage. I wish to emphasize and make clear these two points: the location of a body of timber near a certain mill or within the limit of the holding of a certain company makes it of especial value to the particular operator concerned. In business practice, his right of operation in the territory is tacitly recognized by other operators. In many instances the body of Government timber to be sold is comparatively small, isolated and surrounded by other holdings, absolutely precluding the possibility of competition. The effect of control of banking grounds, rights of way, mill sites, adjacent timber etc. by parties other than the Government must, of course, be taken into consideration in fixing the sale price of timber.

Conditions and Methods of Selling.

The fundamental reason why the sale price of private stumpage is no criterion of the value of Government stumpage is that the conditions of sale are essentially different. In the sales of national forest timber the operator does not carry a heavy investment in standing timber with accumulating holding charges, including taxes, fire protection etc., neither does he stand the risk of an entire loss of his stumpage by fire. In a purchase of national forest timber the operator pays for it in advance payments, the amount of such advance payments being usually sufficient to cover approximately a three months' cut, taking into consideration the number of feet board measure required to be removed each year under the contract. Title to the timber passes to the purchaser only after the timber is cut and scaled. All timber is sold on actual scale and not by estimate. The purchase and ownership of private stumpage necessitate an appreciable investment, together with usually heavy annual carrying charges in the way of taxes and interest. The owner assumes the risk of losses from fire. Usually such sales are made by estimate and not by actual scale. Obviously, taking the sale price of private timber for comparison even were it practically possible to secure accurate and reliable information relative to the conditions of sale, is not comparing in any way analogous cases. Again, the condition exists that the greater majority of the transfers of private stumpage where the problem of appraisals of Government timber are most immediate are confined to the purchase of comparatively small tracts by companies who wish to consolidate their holdings and who by virtue of their strategic location can usually dictate just what prices they will pay. In other words, there is little competition in the purchase of private stumpage, the same conditions making for its elimination as in the case of sales of Government stumpage.

Uniformity in Sales.

Having had to discount, largely at least, the possibilities of competition and being unable to use the sale value of private stumpage as a safe criterion of values, some simple, satisfactory method had to be worked out to insure some degree of uniformity among different purchasers. The following excerpt from the administrative Timber Sales Manual of the Forest Service, approved by the Secretary of Agriculture December 1, 1911, covers the policy briefly and sums up the general principles underlying the methods of determining stumpage prices.

> In all sales the stumpage prices will be based not upon local prices but upon the actual value of the timber. Timber on a gentle slope and within a mile of a drivable stream may be worth more than twice as much as equally good but less accessible timber. The Forest Service will not compete in price with timber from claims or land grants. The actual value will be determined by deducting from the value of the product the cost of logging and manufacture and a percentage of profit ranging from 10 to 30 percent on the investment required in each 1,000 feet b. m. or other unit of quantity which is handled. The exact percentage will depend upon the size of the operation, the stability of market conditions, and the risk of loss involved.

To apply these principles in actual practice requires reliable basic data on the factors governing the logging of the timber in place, its transportation to the mill, its manufacture and marketing. Such data must cover topography and surface of the ground, stand per acre, percentage of different species and quality of the timber, amount of underbrush, length of logging season, silvicultural condition of the stand to determine the best method of marking to insure future growth, drivability of the streams, advisability of railroading, method of milling, percecntage of overrun, percentage of grades in different species, cull etc. This data is so fundamental that a brief description of how it is secured is of interest.

To Obtain Reliable Data.

A detail topographic map is made, the General Land Office or U. S. G. S. surveys being user for control, if available, otherwise special transit or plane table control is made by running up the main ridges and streams. On the control lines verticle angulation gives the elevations. On the cross lines for estimates and interior topography the Abney clinometer and the barometer checked by camp reading and curve platting are used. The aim is not to have any line run for estimates and interior topography more than two miles long without being tied in at both ends to the transit or plane table control. I would here like to present for your consideration a sample map which has just recently been completed and which will show graphically the character of work being done. Ordinarily, such control on unsurveyed ground costs about $18 per mile and represents approximately 50 percent of the total cost of securing the complete data. A camp draftsman keeps the map up to date so that it is completed for use when the crew is ready to leave the field.

Hand-compass strips a chain wide are run as nearly as practicable at right angles to the contours in order to get the best average of drainages, at distances apart varying from 1/16 to ½ mile, depending on the intensiveness of the estimate desired. Usually on surveyed ground in heavy timber a forty is crossed twice. This gives an estimate of 10 percent. In less dense stands of timber the section may be crossed four times and in burns or open areas twice, reducing the estimate to 5 percent or even 2½ percent. On each strip the timber is estimated. This is done by tallying the trees by diameters determined ocularly, checked occasionally by using the Blitmore stick or calipers. Windfalls are paced or measured with steel tape to get heights. Volume tables showing the contents of trees of different diameters and containing different numbers of logs are compiled from the measurements of a large number of felled trees, the logs from which have been carefully scaled. Estimates are subject to check currently, and are checked by having a check estimating crew run over a completed line starting in at the same point and tying in at the same point as the original crew. The check crew tallies the trees by diameter classes from actual measurement and measures windfalls with steel tape or standing trees with an hypsometer. Such a check system incidentally checks the total estimate, although it is designed mainly to check the estimator, thus locating the error; for example, if the check crew shows a much larger number of trees on the strip it shows that the crew has been getting its strip too wide; if too many trees of large diameters, overestimates on large diameters are being made, so too for hights. Such checks do not delay the progress of the work and make it possible to correct errors currently by changing men or calling attention to their mistakes. It also makes possible the use of less experienced men than ordinarily employed.

Reports on special forms provided for the purpose on the factors governing logging—such as possibilities for chutes, general steepness of slopes, surface, swamp, rocky etc., banks of streams and volume of water available for driving, railroad grade and the like—are covered. In general such factors are divided under two main headings: logging in place and major transportation.

Finding Average Cost of Production.

With the above data secured a logging engineer of experience visits the area and works out the best method of logging to be adopted and analyzes the cost of the operation. This analysis covers the character of improvements needed —dams, flumes, railroads, camps, and the location of these and like improvements; equipment needed—logging tools, engines, steam loaders, etc.—labor factors—purchase of supplies and the other details. In addition complete data are secured on milling facilities—selling prices of lumber, grades, mill overrun, markets, etc.

Such information gives finally the average cost of production per thousand feet board measure for both milling and logging. Estimated cost of production is based upon average efficiency in labor, equipment and supervision, and the type of operation adapted to the unit in question. Thus in the case of small mills in a stock or agricultural community, where the mill is run incidental to the occupations, a different standard is used than in regions where lumbering and milling are well standardized.

In order to simplify the collecting and handling of this data in actual practice various items are standardized under captions such as labor, management, improvements, equipment, falling and cutting, skidding, swamping, decking and loading, etc. (A complete outline showing all the captions used in practice is attached to this paper as an appendix.)

Two Plans of Figuring Appraisals.

Two general methods of figuring appraisals are in use. Using the unit costs per thousand feet without taking into consideration the time factor and total investment is what has been called the Operating-Cost method. When, however, the time element and total amount of capital invested during certain periods are considered it is known as the Investment-Profit method. To illustrate briefly the difference of the two: The operating cost plan would simply consider in a driving proposition that it cost $10 to log to the mill without taking into consideration the length of time the $10 is tied up in the logs or how much total investment there is outstanding to pay interest upon, whereas the investment profit method would consider not only the unit cost per thousand, but the length of time the logs had to be held in the woods before they could be driven to the mill and the number of times the money could be turned in a year. This contract holds good, for example, between a driving and railroading proposition where the unit costs per thousand might be the same or even lower for the railroad, whereas the initial investment required for the railroad would be the heavier.

Although the operating cost method does not fully take into account the time factor in the calculation, yet in practice it is so very much simpler than the investment profit method that it has been much used. The simplest application of this method in the early work of stumpage appraisals was to take the logging cost plus the milling cost minus the average selling price and then split the difference in half—one-half going to the operator as profit and the other half being taken as stumpage. In practice the percentage of the difference taken as stumpage was varied in an attempt to recognize differences in the desirability of different logging chances. The whole calculation was roughly approximate and served all practical purposes until better data could be secured. Applying this rough method to a specific case as an example: Suppose the cost of logging was $5, milling $5, selling price $18, then $18 — ($5 + $5) = $8 = $4 stumpage and $4 profit. You see, this $4 profit does not take into consideration the time of the investment and what percentage return it really is in actual profit on the capital at stake. As the work of the Service advanced and the policy of allowing sales for longer periods than five years was put into effect to encourage the opening up of the more inaccessible bodies of timber and to justify the large investments necessary to handle such operations a more accurate method of stumpage appraisals became a necessity. Clearly something more was needed than simply the judgment check of an administrative officer, subject as it was to great variation, depending on the temperament of the Forest officer and the

(1) Former Minnesota loggers: Al H. Powers, of Marshfield, Ore.; J. P. Keyes, of Bend, Ore., and B. R. Lewis, of Seattle, Wash. (2) W. D. Starbird, of Spokane, Wash., and Manager Tottman, of Hamilton, Mont. (3) Former Menominee, Mich., lumbermen: A. W. Clark, of Portland, Ore., and W. E. Wells, of Somers, Mont. (4) John P. Weyerhaeuser, of St. Paul, Minn.; H. C. Clair, of Portland, Ore., and Peter Connacher, of Yacolt, Wash.

PROMINENT AMONG THOSE IN ATTENDANCE AT THE FIFTH ANNUAL PACIFIC LOGGING CONGRESS AT SPOKANE, WASH., SEPTEMBER 24-27, 1913.

WE INVITE
CORRESPONDENCE WITH

LUMBERMEN

OF THE

HIGHEST

CREDIT

WHO WISH TO READJUST THEIR FINANCIAL OBLIGATIONS, TO MATURE OVER A PERIOD OF SEVERAL YEARS.

FINANCING OF THIS CHARACTER CAN BE HANDLED BY US QUICKLY AND AT SMALL COST TO THE BORROWER.

F. B. HITCHCOCK
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Lumbering Plants Designed
Plans and Specifications Prepared
Estimates Furnished
Personal Supervision Given
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SOME OF THE PLANTS DESIGNED:
CANYON LUMBER CO., Everett, Wash.
CANADIAN WESTERN LBR. CO., LTD., Fraser Mills, B. C.
BRITISH CANADIAN LBR. CO., LTD., New Westminster, B. C.
COLUMBIA RIVER LBR. CO., LTD., Golden, B. C.
WAGNER & WILSON LBR. CO., Monroe, Wash.
STIMSON MILL CO., Seattle, Wash.
BRYANT LUMBER CO., Seattle, Wash.

pressure brought to bear by the prospective purchaser to drive the best bargain possible.

Practical Appraising Methods.

To simplify the use of the data, the different methods have been reduced to formulae into which figures can be substituted and results obtained easily in practice. Taking these up in order and citing their application to specific cases:

(1) Forester's formula—so called because it was outlined by the Forester and included in the printed administrative instructions. Used in small sales and as a check on the investment formula in all large sales.

It makes provision for the operator's profit by allowing him as profit on each thousand feet produced a certain percentage of the cost of production per thousand feet, including depreciation, interest, and stumpage. It reduces itself to the proposition that the stumpage price equals the average mill run selling price of lumber divided by one plus the percentage of profit allowed minus the entire cost of production, or the stumpage price equals the selling price of lumber minus the cost of production exclusive of stumpage, minus a profit figured as a percentage of the entire cost of production including stumpage.

The percentage of profit allowed is in proportion to the risk. Ordinarily in new operations involving a large investment and consequent large risk 25 percent is allowed; in cases of established plants with a nominal risk 15-20 percent is considered adequate. The formula follows:

S=selling price.
x=Stumpage rate.
d=Investment charge per M. (wrecking value deducted).
i=Interest charges.
c=Operating cost stump to f. o. b. cars.
m=Maintenance.
o=Overhead.
r=Extra cost, due to regulation.
P=Entire cost of production.
p=Profit allowed in percent.

$$\text{Then } x = S - (d+i+e+m+o+r) - P(d+i+c+m+o+r+x)$$

$$\text{Simplifying } x = \frac{S}{1.p} - P$$

Example:
$20, selling price.
25% profit.
$12=cost of production.
Then

$$x = \frac{\$20.00}{\$1.25} - \$12.00.$$

$x = \$4.00$ stumpage.

As stated, this formula may be applied to the average cost of production and the average stumpage rate obtained. If desired it may be applied to each species separately. Since the operator looks to the more valuable species for his profit, it does not seem fair to charge as great a proportion of the cost of improvements and equipment to each thousand feet of the less valuable species as to each thousand feet of the more valuable species. This may be logically done as follows:

S=Average selling price of species.
N=Total cost of improvements and equipment less wrecking value.
A=Total stand species to be cut.
a=Percent of species of total cut.
O=Cost of production exclusive of construction and equipment charge.
X=Construction and equipment charge per M.
Then:

$$\frac{a\,(S-o)}{\text{(1st spec)}\quad\text{(2nd spec)}\quad\text{(last spec)}} - N$$

Example:

White pine	1,200,000 feet =	48%
Larch	800,000 feet =	32%
White fir	500,000 feet =	20%
	2,500,000 feet =	100%

Total cost of improvements and equipment $2,500. Average selling prices:

White pine ..... $20.00 per M.
Larch ..... 18.00 per M.
White fir ..... 15.00 per M.

Cost of operation exclusive of improvements and equipment $10.00 per thousand.

White pine ..... (S — o) = $20 — $10 = $10
Larch ..... (S — o) = 18 — 10 = 8
White fir ..... (S — o) = 15 — 10 = 5

$10 \times .48 = 4.80 \div 8.36 = .57$ or 57%
$8 \times .32 = 2.56 \div 8.36 = .31$ or 31%
$5 \times .20 = 1.00 \div 8.36 = .12$ or 12%

Total, 8.36

$2500 \times .57 = $1425
2500 × .31 = 775
2500 × .12 = 300
$2500

$$\text{White pine } (\times) = \frac{1425}{1200} = \$1.19 \text{ per M.}$$

$$\text{Larch } (\times) = \frac{775}{800} = \$0.96 \text{ per M.}$$

$$\text{White fir } (\times) = \frac{300}{500} = \$0.60 \text{ per M.}$$

Thus the total cost of production per thousand is as follows:

White pine $11.19
Larch 10.96
White fir 10.60

The charge for interest may be handled in exactly the same way, and for the same reasons it seems that it would ordinarily be fair to so handle it.

Estimating in Large Investments.

(2) Hunter's formula (Investment-Profit Method).

(Suggested by W. N. Hunter, Bureau of Corporations.)

This formula is to be used in all sales where large investments are involved as a counter-check to the percentage of operating cost formula. As Forest Service appraisers develop skill in determining the items of investments, and more complete data is secured on milling, cost of logging etc., it is felt that this or some other investment formula will prove the logical way of determining stumpage rates.

This formula provides for the operator's profit by allowing a certain percent annually of the amount invested during each year of the operating period. This is done by assuming that each year a certain portion of the original investment will be withdrawn under depreciation and the profit allowed upon the investment remaining. In applying the formula the amounts required for profit and depreciation annually are obtained in a lump sum. Therefore the calculation of operating cost need not include items for depreciation or interest. Under this formula the profit allowed should vary from 14 to 18 percent, depending upon the degree of risk.

The formula follows:
A=Original cost of plant plus working capital.
B=Amount to be written off.
n=Number of years of operation.
c=Rate of profit.
X=Amount required each year for profit and depreciation.
Then by an algebraic solution:

$$X = cA + \frac{B}{(2+c) + (1+c)^2 + (1+c)^3 - (1+c)^{n-1}}$$

In ordinary practice the denominator is represented by d, and d is obtained from a table showing its value for varying values of c and n.

$$X = cA + \frac{B}{d}$$

Example:
$A = \$100,000 + \$30,000.$
$B = 80,000.$
$n = 10$ years.
$c = 12\%.$
$d = 17.55$ (calculated or obtained from table).
6,000,000 feet = Annual output.
$18.00 = Average selling price.
$11.00 = Cost of operation exclusive of depreciation and interest.

$$X = .12 \times \$130,000 + \frac{\$80,000}{17.55}$$

$X = \$15,600 + \$4,558$
$X = \$20,158$ or $3.36 per M.
$18.00 — 11.00 = $7.00.
7.00 — 3.36 = $3.64.
Stumpage rate = $3.64.

A Compromise Method in Practice.

The use of the Hunter formula necessitates, as you readily see, intensive data of a character it is not always possible to obtain. Recognizing the inaccuracies of the straight Operation-Cost method and the difficulty of securing at present data to make the Investment-Profit simple to practical application, a compromise method is in use in District 1. This method briefly is to consider the operation costs and then check the figures by a use of the Investment-profit method, assuming for the particular operation the amount invested and the time it is tied up.

In explanation of this method of appraisal, the watershed of Calispel Creek in the Kaniksu National Forest in Idaho, is taken as an example.

This watershed contains 243,568,000 feet B. M. of saw timber and 213,413 cedar poles, or a total in feet B. M. of 264,000,000 feet B. M., and the appraisal is based on the utilization of this material in twelve years.

Calispel Creek flows into Priest Lake. The timber can in part be skidded and loaded by donkey engines and in part must be skidded with teams and handled in live chutes and trail chutes to the landings. The logs must be transported to the mouth of the creek in Priest Lake by logging railroad, boomed or brailed and towed to the mouth of the lake, driven down Priest River to Pend d'Oreille River, and sorted and boomed at one of the mills along Pend d'Oreille River on the Great Northern Railway.

Improvements will be required consisting of 36 miles of logging railroad grade, 15 sets camps, 15 miles wagon road, 31 miles chute, dams for chute landings, 200 skidway landings, telephone line and stream improvements etc., to a total cost of $168,200. The average yearly expenditure for improvements will be about $15,000 and the cost per thousand feet of logs to retire this expense will be $0.64.

Equipment will be used to a total value of $140,000, including 15 miles 30-pound railroad steel, spikes, bolts, plates etc.; 2 locomotives, 2 steam loaders, 80 log cars, 3 donkey engines, 12 teams horses, tug, barges etc.; harness, vehicles, logging tools etc. The depreciation on this, at percentages varying from 8⅓ percent for steel to 20 percent for horses, will amount to $15,200 per year or $0.74 per thousand.

Logging Operation Investments.

The capital invested in the logging operation varies from month to month and year to year as it is invested and retired or depreciated, but averages a fixed yearly investment of $81,750.

COSTS PER M.

Logging—

Retirement of improvements	$0.64
Depreciation of equipment	.70
Interest on capital invested at 6%	.22
Taxes and insurance	.15
Cutting, swamping, skidding, chuting, landing, etc. (figured separately for each logging unit and averaged for total in proportion to timber in each unit)	3.73
Toting and freighting supplies	.10
Railroad operation (labor, fuel and oil)	.50

Mr. Lumberman, have you been getting some of this $5,000,000 saving in insurance premiums?

Combined Statement of The Northwestern Mutual Fire Association of Seattle, and The Associated Lumber Mutuals of January 1st 1913:

	Date of Organization	Cash Assets	Net Cash Surplus	Total Losses paid since Organization	Div. and Savings since Organization	Premium Income for 1912	Rate of Div.
Northwestern Mutual Fire	1901	$ 397,021.90	$ 136,317.49	$1,018,436.49	$1,251,362.34	$ 525,812.27	40%
Central Manufacturers'	1876	598,120.70	361,864.11	2,260,651.02	673,131.43	388,549.67	25%
Lumbermen's of Mansfield	1895	591,264.49	367,656.13	946,155.05	900,442.18	405,723.07	40%
Lumber Mutual of Boston	1895	745,865.44	522,447.73	1,039,164.95	956,766.48	424,104.96	40%
Pennsylvania Lumbermen's	1895	612,820.21	376,048.63	869,341.09	731,875.30	422,343.20	40%
Indiana Lumbermen's	1897	366,764.25	209,156.61	643,367.51	414,126.05	296,991.79	40%
Total		$3,311,856.99	$1,973,490.70	$6,777,116.11	$4,927,703.78	$2,463,524.96	

The average Net Cash Surplus of the ten leading Stock Companies operating on the Pacific Coast, for each $100.00 in force, is $ .38
The average Net Cash Surplus of the Mutuals above for each $100.00 in force is 1.70

If you want to get in on this and at the same time secure first class indemnity write

F. J. MARTIN, General Agent, 208 Columbia Street, Seattle, Wash.

Railway maintenance	.10
Unloading	.03
Booming, towing, driving, sorting	1.00
Administration	.35
Frd.	$7.52
Frd.	$7.52
Supplies, repairs and replacements	.10
Cross cost of logs at mill, exclusive of stumpage	$7.62
Net log cost, per M. ft. of lumber (15% overrun)	$6.63
Manufacture—	
Averaged from cost data furnished by other mills of similar capacity in region, includes labor, supplies, depreciation, maintenance, interest, taxes, office and general expenses for sawmill, yarding, kilns, planing mill and shipping, selling expense etc.	6.00
Average cost lumber production exclusive of stumpage, per M. ft. lumber	$12.63

The present average mill run selling value of the lumber will be $15.70 per thousand, based on 42 percent white pine at $20, 17.5 larch at $13, 13 percent cedar at $12, 9.3 percent Douglas fir at $13, 2 percent spruce at $13, 1 percent yellow pine at $15, and 15.3 percent mixed hemlock, balsam and white fir at $12. These prices are based on the average prices received during the last twelve months for lumber of similar kinds f. o. b. the mill at points in this district.

Selling value lumber	$15.70
Cost lumber production	12.63
Stumpage and profit	$ 3.07

Allowing 12% profit on all costs of lumber production including stumpage cost.

$$\text{Stumpage price} = \frac{15.70}{1.12} - 12.63$$

$$= 14.02 - 12.63$$

$$= \$1.39 \text{ per M. ft. of lumber or } \$1.60 \text{ per M. ft. of logs (15\% overrun)}$$

$$\text{Profit} = 12\% \text{ of } (\$12.63 + 1.39) = \$1.47.$$

A yearly output of 25,300,000 feet B. M. of lumber (22,000,000 feet logs) at a profit of $1.47 per thousand would yield annual earnings of $37,000.

In addition to an average fixed investment of $81,750 in logging operations, an investment of approximately $325,000 will be required for a manufacturing plant having a yearly output of 25,000,000 feet B. M., or 60,000 feet B. M. per 10-hour shift, including power plant, sawmill, planing mill, yards, lumber in yards, accounts receivable, working capital, logs in pond, pond improvements and the like, or a total invested capital of $406,750, on which annual earnings of $37,000 are made. This is at the rate of 9 percent per annum in addition to interest at the rate of 6 percent allowed in costs of logging and manufacture, or total annual earnings of 15 percent per annum.

In conclusion, let it be understood that the methods proposed do not intend in any way to fix stumpage prices by any absolute formula, or to discount the judgment and experience of the practical logger and lumberman, who have shown wonderful resourcefulness in meeting the thousand and one conditions as they arise on the ground, on the other hand, the ultimate idea of all this work is to systematize and make available and applicable the results of past experience not only in the appraisal of stumpage values but in all phases of the logging and lumber business.

Appendix.

Logging.

I. Labor.
II. Management.
III. Improvements.
  1. Distinction between Improvements and Equipment—Method, Cost Distribution, etc. etc.
  2. Roads.
  3. Railways.
  4. Bridges.
  5. Stream Improvements.
  6. Camps.
  7. Chutes.
  8. Flumes.
  9. Tramways.
  10. Overhead Conveyors.
  11. Landings, Skidways, Banking Grounds etc.
  12. Other Miscellaneous Improvements.
IV. Equipment.
  1. Methods cost distribution first cost, maintenance, repair and depreciation costs, etc.
  2. Live Stock.
  3. Power Machinery.
  4. Railway Rolling Stock.
  5. Wagon, trucks, carts, sleighs etc.
  6. Wire Rope.
  7. Logging Tools.
  8. Equipment in Improvements (Salvagable elements in improvements as steel rails etc.).
  9. Marine equipment, boats, etc.
  10. Other miscellaneous equipment.
V. Falling and Cutting.
  1. Methods.
  2. Cost Elements.
VI. Skidding.
  1. Hand Skidding.
  2. Live Stock Skidding.
    Tonging.
    Trailing.
    Bunching.
    Draying and Sledding.
    Carting and Bumming.
  3. Power Skidding.
    Donkey Yarding and Roading.
    Donkey Skidding.
    Portable Skidders.
    Overhead Skidders.
  4. Cost Elements.
VII. Swamping.
  1. Methods.
  2. Cost Elements.
VIII. Decking and Loading.
  1. Hand Loading.
  2. Cross Haul.
  3. Horse Jammers.
  4. Steam Jammers.
  5. Combined Skidding and Loading.
  6. Cost Elements.
IX. Hauling.
  1. Wagons and Trucks.
  2. Sleighs.
  3. Carts, etc.
  4. Methods operation cost and efficiency factors etc.
  5. Table of cost elements.
X. Chuting.
  1. Log Chutes.
  2. Pole Chutes.
  3. Ground Slides, etc.
  4. Cost Elements.
XI. Fluming.
  1. Methods Operation.
  2. Cost Elements.
XII. Railroading.
  1. Methods Operation.
  2. Maintenance.
  3. Cost Elements.
XIII. Water Transportation.
  1. Driving.
  2. Rafts, brails, cribs etc.
  3. Booming, sorting, storage etc.
  4. Cost Elements.
XIV. Miscellaneous Logging Costs.
  1. Blacksmithing and carpenters.
  2. Scaling.
  3. Clerks etc.
XV. Forest Service Protective Measures.
  1. Methods.
  2. Cost and Efficiency.
XVI. Cost Keeping Systems.
  1. General Principles and Outlines.
  2. Labor, Wages, and Subsistence.
  3. Improvements.
  4. Equipment.
  5. Depreciation.
  6. Maintenance and Repairs.
  7. Supplies.
  8. Interest.
  9. Taxes.
  10. Property and Liability Insurance.
  11. Supervision and Administration.
  12. Office.
  13. Miscellaneous.

Following this address, which Mr. Silcox was forced to cut short because of lack of time, the Chair called for the reports of committees.

The committee on place of next meeting reported that it had received two invitations—one for Aberdeen and one for Bellingham. The committee recommended that the congress be held in Bellingham next year and indorsed Aberdeen as the place of meeting in 1916. The committee was of the opinion that San Francisco would be the choice of the congress for a meeting place in 1915.

The report was adopted unanimously. Mr. Donovan thanked the congress on the part of the people of Bellingham.

Election of Officers.

The committee on nominations recommended that the following officers be elected for the ensuing year:

President—J. J. Donovan, Bellingham, Wash.
Vice president—A. W. Laird, Potlatch, Idaho.
Secretary-treasurer—G. M. Cornwall, Portland, Ore.

The committee recommended the following for members of the executive committee:

British Columbia—Peter Lund.
California—W. W. Peed.
Idaho—H. M. Strathern.
Montana—George Weisel.
Oregon—A. G. Powers.
Washington—E. G. English.

Mr. Donovan said the report was very satisfactory with one exception, and that was the nomination for

L. R. McCOY, OF BONNERS FERRY, IDAHO;
Assistant Manager Bonners Ferry Lumber Company.

presidency. He said it was indeed an honor to be selected, but he thought there were others better fitted. He said that Messrs. Blake and Clair had been the fathers of the congress and he believed that if Mr. Blake had been present he would have been again chosen president, and he would ask the committee to meet again and reconsider. Al Powers also objected to being placed on the executive committee.

At this point B. R. Lewis moved that the report of the nominating committee be approved. The Chair was not inclined to put this motion, but J. D. Young explained that he had been on the nominating committee last year and had promised President Blake that if he would accept the presidency at that time he would be relieved this year. He said to Mr. Donovan:

"Your nomination is a very popular one and I am sure you are the only one to object to it. It would be useless to call the committee together again because they are unanimous in their wish that you should serve."

Mr. Donovan then withdrew his objection upon the agreement of Al Powers to remain on the executive committee, and the secretary put the motion that the report be accepted and the officers declared elected. This motion carried without a dissenting vote.

Following is the report of the resolutions committee, which was unanimously adopted:

Indorsing Conservation Congress.

Whereas, The work of the National Conservation Congress looking to the conservation of our national resources is of great importance to the American people and in line with the general progress of the times; and

Whereas, Lumbermen will have especial interest in the fifth National Conservation Congress to be held in Washington, D. C., November 18, 19 and 20, because of the fact that forestry and lumbering will be prominent features of the program; be it

Resolved, That the Pacific Logging Congress gives its earnest indorsement to the work of the Congress and urges the attendance of as many members as possible at the Washington meeting.

Workmen's Compensation Legislation.

The Pacific Logging Congress heartily indorses the movement looking to securing in the various States some form of workmen's compensation legislation that will be satisfactory to employer and employee alike. The State of Washington has blazed the trail by enacting a compensation law that has brought results. This congress believes that the States of Oregon, Idaho, Montana and Province of British Columbia must soon follow the example of their sister State in securing legislation that will place their industries on a more stable basis by insuring to the injured workmen a fixed and definite sum, eliminating the demoralizing factor of personal damage suits against the employer.

This congress believes that the growing of timber is a national and State function and each State should make a careful examination of its cutover lands unfit for agricultural purposes, and better adapted for reforestation, with a view of purchase through condemnation or otherwise, and proceed to the creation of State and national forests.

The Pacific Logging Congress believes in the expenditure by the various States and Provinces of liberal and adequate appropriation for forest fire protection. To this end we indorse the efforts being made for the creation of field military posts, near the national forests, with a view of utilizing the national troops where emergencies arise in the protection of the national forests from fire.

The Pacific Logging Congress desires to extend its thanks to the lumbermen of the Inland Empire for the entertainment provided; and especially the members of the local committee on entertainment, whose hospitality has added to the pleasure of the session.

A special vote of thanks is tendered the Potlatch Lumber Company, of Potlatch, Idaho, for the delightful outing and entertainment being provided at its camp and mills; also to the Washington Water Power Company for furnishing a place of meeting and for many other courtesies extended.

Our appreciation is also due the various railroads for their securing for the congress special rates to Spokane; and to the lumber press and daily newspapers of Spokane for the effective publicity they have given the congress.

In view of the fact that the forest resources of the Northwest are second in importance only to agriculture; therefore, be it

Resolved, That the Pacific Logging Congress pledge itself as in favor of using every reasonable and proper means of securing adequate appropriation from the various States for providing means so that the young man who wishes to follow the business of logging may have the same advantages to receive the necessary training as is now afforded the boy who is to follow agricultural pursuits.

This congress regrets that due to unavoidable cause our president, Mr. Blake, was not able to be with us and preside over this congress. We wish to express our thanks to Mr. Donovan who has so ably presided over this meeting.

A special vote of thanks is extended to our able secretary, George M. Cornwall, for his unflagging interest and tireless efforts toward making this meeting the success it has proven.

(Signed)
W. W. Peed, Chairman.
John P. Van Orsdel.
James O'Hearne.
H. W. Sessoms.
W. E. Wells.

J. S. O'Gorman, reporting for the committee on auditing and finance, reported no discrepancies in the treasurer's report. He said that from this report it was evident that, like the cost of living, the cost of logging congresses is going up. He said he believed they were worth the money, but they ought to be put on a better financial basis. For this reason he made a motion that the 1914 logging congress be made self-sustaining in that it be financed by memberships only, and that in order to accomplish this the annual dues be increased to $10. This motion was passed with the understanding that the large firms could take as many memberships as they wanted to.

The Chair then announced the appointment of two special committees. The first on the standardization of loggers' tools was composed of the following:

W. W. Peed, Eureka, Cal.; J. D. Young, Kelso, Wash.; J. P. Van Orsdel, Portland, Ore.; T. Jerome, Seattle, Wash.; George Weisel, Missoula, Mont.; C. A. Stewart, Portland; A. G. Labbe, Portland.

The second special committee on logging engines was composed of the following:

A. G. Labbe, Portland, Ore.; Eugene Roberts, Tacoma, Wash.; C. G. Frink, Seattle, Wash., and Harry Turney.

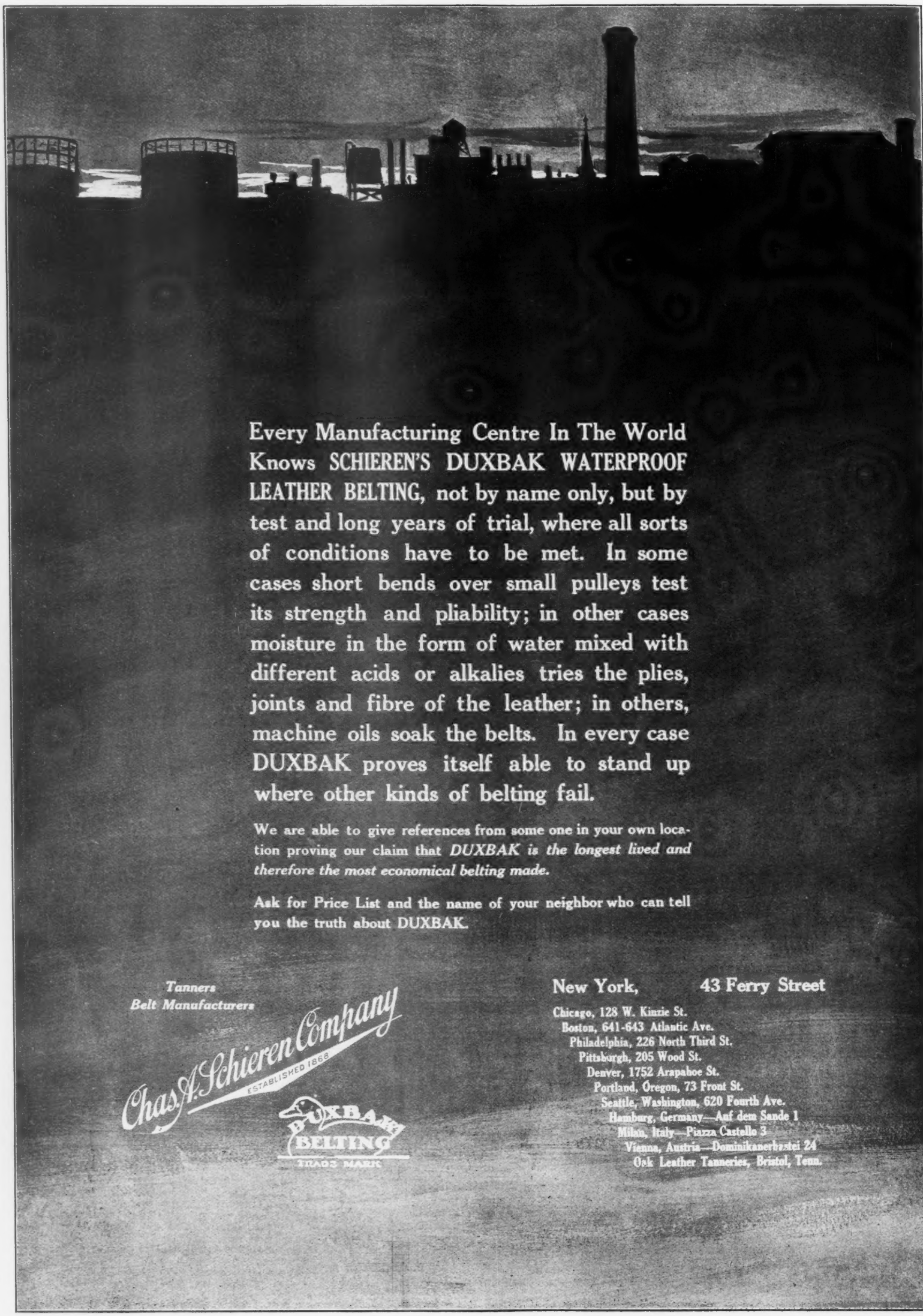
A motion prevailed that a general committee to be composed of three loggers and two deans of forestry schools, with the new president as a member of the committee, be appointed to formulate plans for a course in logging engineering for western colleges.

The president was granted the authority to appoint a special committee for British Columbia to handle this subject if it was thought advisable.

Last year committees were appointed for each State and the Province of British Columbia to work in the interests of courses of logging engineering becoming regular and important parts of the curriculum of the universities. Reports from these different districts showed that good progress was being made along these lines. The University of Washington has a logging engineering course in connection with its school of forestry. The Oregon Agriculture College has established a course of logging engineering, but so far the legislature has refused to appropriate funds for building a special building for this course. The California legislature recently made an appropriation of $42,000 for the establishment of a course of forestry and logging engineering at the agricultural college. Idaho recently appropriated $15,000 for this purpose and Montana is also making progress.

The secretary announced that the Western Forestry & Conservation Association would hold its next meeting in Vancouver and all were urgently invited to attend and were promised a royal entertainment by the famous entertainer, John O'Brien, of the Brooks-Scanlon-O'Brien Company. It was also announced that the eight sleepers composing the special train for the trip to Potlatch were all filled and that there were about thirty more who would be unable to attend unless friends who had berths would be willing to double up with them.

The session adjourned at 5:30 and the loggers went to the city, where an hour later the crowning feature of the entertainment, the banquet in the Hall of the Doges, was to be served.



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Portland, Oregon, 73 Front St.
Seattle, Washington, 620 Fourth Ave.
Hamburg, Germany—Auf dem Sande 1
Milan, Italy—Piazza Castello 3
Vienna, Austria—Dominikanerbastei 24
Oak Leather Tanneries, Bristol, Tenn.

THE BANQUET.

The crowning feature, displaying the hospitality of the city of Spokane and the Inland Empire lumbermen, was the dinner given in honor of the loggers in the beautiful Hall of the Doges at Davenport's Cafe, on Friday evening. The reputation of this famous grille is well known all over the Pacific coast and among travelers the country over. It is unnecessary as well as impossible to describe the culinary triumphs of the chef, further than to say it was of Davenport's best.

The Hall of the Doges has a somewhat different appearance from the ordinary camp cook house, but the loggers seemed to enjoy themselves none the less for that reason. Two beautifully-gowned ladies sang for their entertainment and with sparkling prisms hanging from the elaborate chandeliers and sparkling wine in their glasses, they were surely a well satisfied and happy "crew."

The famous Eloise Francois Cartier VanDissel, although it is said he is not a Scotchman, managed to relegate H. M. Strathern to background for awhile and himself again occupy the position of toastmaster, a place that, before the days of Strathern, would have been conceded to be his without fighting for it. To show his magnanimity and his appreciation of the sentiments of the newly-elected president, the first thing the toastmaster did was to request that the great Irish comedian "Tommy" Shields from Seattle sing: "Who T'rew de Overalls in Mrs. Murphy's Chowder." Much to the disappointment of everybody "Tommy" refused, but he soon had them all in a roar of laughter by springing a couple of new (question-mark) ones. He proved himself just as popular as ever.

It looked as though the Scotch, the Irish, and the Dutch had had their innings and therefore the politic toastmaster next called a German to the bat. He went through the unnecessary formula of introducing A. L. Remlinger, the largest Roebling representative present. He tied Shield's score, but lack of space prevents a reproduction of a verbatim report of his remarks.

inviation to everyone to take the trip to Potlatch and Elk River the following day. He said:

It will be a keen pleasure for me and I know would have been greatly enjoyed by my late friend and predecessor, William Deary, the result of whose handiwork you will see tomorrow. You are invited to go to Potlatch. When I first asked the meaning of the Indian word "Potlatch" I was told that it meant a gathering of the tribe and the giving of presents. Some of the stockholders of the Potlatch Lumber Company thought it meant the giving of dividends, but have since come to the belief that it means the sending out of assessments.

He closed his remarks by saying he hoped everyone would be able to enjoy the trip.

A characteristic telegram from Dr. C. A. Schenck with best wishes for the banqueters was read and then the toastmaster called on H. M. Strathern to explain why, as a member of the entertainment committee and on all other occasions for that matter, he always managed to exclude everyone else when it came to a matter concerning the ladies.

Mr. Strathern sidestepped the issue, probably considering that the request only displayed jealousy on the part of the toastmaster. Among other appropriate thoughts Mr. Strathern expressed the hope that the succeeding meetings of the Pacific Logging Congress would continues to grow bigger and better each year.

The talks were interspersed with musical selections, and Mrs. Merriam, a local musician of much talent, was recalled by special request, proving to be a strong favorite.

A telegram was sent by the happy banqueters to their former president, E. P. Blake, Seattle, which read:

The fifth annual Pacific Logging Congress sends greetings and thanks for your good work causing four years of progress to be made by this congress and making this meeting possible.

T. Jerome, not of New York but of Seattle, did not know anything about Harry Thaw, but he told a good story on Harry Clair, vice president of the congress and, as that worthy declared, the main "goat" of the proceedings.

Mark Colby, of Portland, told a good story and H. C. said that each succeeding time he came to the Hall of the Doges he enjoyed himself more than ever before. Mr. Toole explained how it was that he claimed relationship to the toastmaster, saying that he had discovered that the "O" in O'Toole had the same meaning as the "Van" in VanDissel. J. P. McGoldrick, the wellknown head of the McGoldrick Lumber Company, Spokane, expressed doubt of the relationship, because he said that VanDissel neither thought, talked nor acted like an Irishman. Mr. Toole proved the relationship by asking Mr. VanDissel a question in Irish (?), to which VanDissell replied "Ya," thus proving that he entirely understood it although nobody else present did.

The toastmaster explained that he never enjoyed anything more than to be called cousin by Mr. O'Toole and then asked everyone to drink to the toast: Good Night. Thus ended Spokane's part in the entertainment of the loggers in time for them to take the "Loggers' Special" train for Elk River and Potlatch as guests of the Potlatch Lumber Company. No more enthusiastic crowd ever dispersed from a more enjoyable feast, and the banquet will be one of the features of the 1913 Pacific Logging Congress that will remain long in the minds of all who were present.

THE TRIP TO POTLATCH.

Two hundred and thirty-seven people—mostly loggers, members of the Pacific Logging Congress—stowed away in eight Pullman palace sleeping cars, traveled nearly 300 miles in twenty-two hours, slept some, but "rubbered" more at electrically-operated sawmills and donkey engines and cable tram systems of hauling logs, and millions of feet of lumber, were royally entertained and dined and returned to the starting place vowing that there never had been such a trip and doubted if there ever would be again. Fifty more loggers wanted to go on the trip, but the Northern Pacific Railroad positively could not scare up another sleeping car at Spokane, having increased the

(1) On the Way to the Potlatch Camp. (2) Loading Logs on Cars at the End of a Cable Tram. (3) Camp at Cable Tram Logging Operations Where Lunch Was Served in Camp Dining Car. (4) Cable Tram Logging Near Bovill. (5) Unfastening the Logs From the Sling at the Cable Tram.

INTERESTING INCIDENTS WHICH MARKED THE VISIT OF THE PACIFIC LOGGING CONGRESS TO THE LAND OF POTLATCH, SEPTEMBER 27, 1913.

The toastmaster said he thought everyone present had heard enough addresses to last him for a week and therefore there would not be any addresses during the evening. A few well-known after-dinner speakers would be given a chance to say something, however. He then called on the newly-elected president who, he said, had presided so beautifully during the entire congress.

Mr. Donovan believed the Spokane congress had been the most successful ever held. He said:

I think there have only been two mistakes made. One was making me president and the other having too many addresses and forcing me to curtail the program and thus cut out the time of our friend from Montana (George Weisel). I promise you that next year the program will have fewer papers and more time will be given in which to discuss them. I thank you all for the coöperation given in making everything a success.

He looked forward with pleasure to the holding of next year's congress in Bellingham, his home, and promised the best the city had, although he said he could hardly hope to entertain the congress in such a royal manner as Spokane had done.

Mr. VanDissel then introduced John O'Brien, whom he spoke of as the prince of entertainers.

Mr. O'Brien said he was told during the evening that he would be expected to give a ten-minute talk, but he wouldn't need that much time. He said he was much pleased at the treatment that had been received from the Inland Empire lumbermen. He had assured his British Columbia friends in advance that they would be royally entertained in Spokane, but the entertainment committee had surpassed his fondest expectations. He said he wanted to see every one present at the next meeting of the Western Forestry & Conservation Association, which will be held in Vancouver, B. C.

The toastmaster then said:

Gentlemen I want to introduce to you our host of tomorrow, A. W. Laird, general manager of the Potlatch Lumber Company.

Mr. Laird said he wanted to reiterate again his Clair, of the same town, was given an opportunity to defend himself, which he embraced with alacrity.

Perhaps you have heard of an Irishman having a flannel mouth (whatever that is), but as a rule the term silver tongue seems better fitted to members of that race. Toastmaster VanDissel has a way of saving the best things for the last and with a smile of anticipated pleasure he introduced "his cousin, Mr. O'Toole."

John R. Toole, of the lumber department of the Anaconda Copper Mining Company, Missoula, Mont., is no stranger in the Hall of Doges, nor is he a stranger to lumbermen of the West and he realized that he had a reputation to sustain as well as the honor of his race to uphold. Those present agree that he did both. He

Y. M. C. A. CAMP CAR AT CAMP 13 OF THE POTLATCH LUMBER COMPANY.

allotment from four to eight and then by force of circumstances had to quit.

At 10:20 Friday night this special train of Pullman sleeping cars pulled out of the Northern Pacific depot at Spokane for the journey down through the wheat fields of the Palouse country, the granary of the Inland Empire, and over across the Idaho line to Potlatch, on the Washington, Idaho & Montana Railroad, owned by the same interests as the Potlatch Lumber Company, and then on to Bovill, the junction with the St. Maries-Elk River branch of the Milwaukee Railroad, and then over that line twenty miles to Elk River, which was reached shortly after 6 o'clock Saturday morning, but in time for a bountiful breakfast at the company's hotel. From this on the visiting loggers were the guests of the Potlach Lumber Company, represented by its general manager, A. W. Laird, and the heads of various departments. The plant at Elk River, completed two years ago, represents the last word in sawmill construction. Equipped with three Diamond Iron Works band mills, the entire plant run by electricity, days only now, is turning out 150,000 feet of lumber, under supervision of Andrew Bloom, superintendent of manufacturing. A. Muckle is the yard superintendent and Charles Munson is in charge of logging. The Elk River plant, including sawmill and planing mill, is operated by electricity with two Westinghouse-Parsons type generators of 1,300 kilowatts capacity, which also furnish lights for the town and operate two camps where the logging is done by electricity.

After inspection of this modern sawmill, planing mill, power plant, and storage pond with a capacity of 20,000,000 feet of logs, the Pullman special pulled out for the return trip, and a few miles out a stop was made to view the electric logging, where a modified type of the MacFarlane sky-line is operated by electric power brought out from the plant at Elk River. In

transmission, the voltage is stepped up from 550 to 11,000 and at the donkey engine is stepped down again to the original 550 volts and is conveyed to a 150-horsepower General Electric logging type motor, equipped with a magnetic break. Power is controlled by a controller as on a street car. There is a circuit breaker on it that prevents burning out. The electric engineering in connection with the Elk River plant and logging was done by E. J. Barry, now electrical engineer for the St. Paul & Tacoma Lumber Company, who accompanied today's excursion.

Camp Lunch and Cable Tram.

Leaving the electric logging and pulling up over a steep grade, attaining at the highest an altitude of 2,900 feet, Bovill was reached before 11 o'clock and the visiting loggers were transfered to a train of logging flat cars, on which had been improvised comfortable seats, and the start made for the camp, five miles out, where T. P. Jones, logging superintendent for the Potlatch plant of the Potlatch Lumber Company, has installed a cable tram system that is proving most satisfactory. This, as well as the electric logging and the big modern mills, was a point of interest of the trip.

At Bovill is located the big cedar pole yard of the E. T. Chapin Company, that handles the cedar products on the Potlatch Lumber Company's lands. Mr. Chapin was one of the party, but as logging was the principal occupation of the visitors, but a brief stop was made, and the cable tram camp was reached, under the guidance of Mr. Jones, in time for an early lunch.

The system of handling logs from the skidway one-and-one-half miles out, where they are yarded by team to the railroad cars, being transported by the cable tram in packages of three or four logs suspended in slings from the tram, is fully described by Mr. Jones in his paper presented at the first day's session of the logging congress.

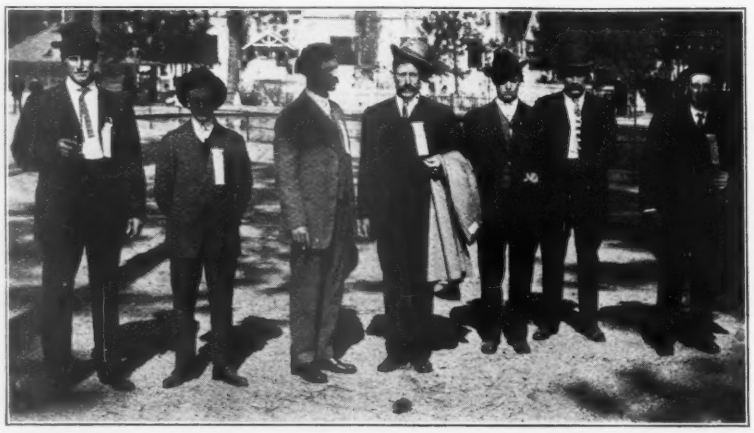
Arrival at Potlatch.

Mr. Jones' cable tram camp was left at 2 o'clock, and after transferring at Bovill to the Pullmans, Potlatch was reached at 4 o'clock, where a one-hour stay was made. Here the visitors were met by Paul Lachmund, sales manager, and his father and mother, Mr. and Mrs. Otto Lachmund, and many other townspeople and lumber company department heads. Otto Lachmund, by the way, found many friends in the party, as did his estimable wife, as he was for many years with C. Lamb & Sons, Clinton, Iowa, and afterwards manager of the Arrow Lakes Lumber Company, Arrowhead, B. C., also a Lamb interest.

The Potlatch plant, with its equipment of four Diamond Iron Works bands and a gang, operating days only, is sawing 300,000 feet of lumber from an ordinary run of logs. M. L. Seymour is superintendent of manufacturing operations at Potlatch, assisted by W. H. Wilson, planing mill superintendent, and Charles Peterson, yard superintendent. The operations of the plant were watched with a great deal of interest during the brief stop. There was 76,000,000 feet of lumber in pile at Potlatch and 37,000,000 feet in pile at the Elk River plant. Owing to the excessive snow, the latter is not operated during several of the midwinter months, but the Potlatch sawmill runs the year round.

Leaving Potlatch, the Hoo-Hoo yell was given, and three cheers for A. W. Laird, and the Potlatch Lumber Company, and the return to Spokane began. Coming over from Bovill to Potlatch, on the Washington, Idaho & Montana Railroad, nicknamed "the college line" because of the famous institutions of learning whose names have been used to designate the communities along the road, the trip was through a timber region, interspersed with many fine farms, showing the fertility of the land when cleared and tilled. Mr. Laird is general manager of the railroad as well as the lumbering operations, and J. D. Morrissey is superintendent of the road.

On the last leg of the trip it was a tired, but happy crowd of loggers who occupied the "Loggers' Special." Because of the many courtesies extended by Mr. Laird and his company, a fund was raised by unanimous contribution on the train, to purchase and present to Mr. Laird, at some time in the near future a loving cup suitably engraved, as a testimonial of the appreciation on the part of the journeying loggers, of his kindness. Spokane was reached shortly after 8 o'clock in the evening, in time for connection with trains to the Coast and Portland, as well as Montana points, and the fifth annual logging congress was but a pleasant memory.



POTLATCH LUMBER COMPANY'S LOGGING REPRESENTATIVES AT CONGRESS.

THOSE IN ATTENDANCE.

Nil Anderson, Seattle, Wash.; Anderson.
E. T. Allen, Portland, Ore.; Western Forestry & Conservation Association.
Chas. B. Anderson, St. Joe, Idaho; Milwaukee Land Co.
P. B. Anderson, Vancouver, B. C.; P. B. Anderson.
Mrs. Edw. Anderson, Vancouver, B. C.
Faye Abrams, Eugene, Ore.; Booth-Kelly Lumber Co.
J. P. Austin, Seattle, Wash.; American Lumberman.
R. L. Adams, Portland, Ore.; John A. Roebling Sons Co.
Wm. Aitchison, Spokane, Wash.; Washington Machinery & Supply Co.
Noel Aylmer Dew, Portland, Ore.; Portland Lumber Co.
J. L. Aasen Bros., Coquille, Ore.
J. M. Ayers, Kelso, Wash.; Hammond Lumber Co.
F. L. Alt, Bovill, Idaho; P. L. Co.

J. A. Byerly, Castle Rock, Wash.; Silver Lake Ry. & Lbr. Co.
B. C. Ball, Portland, Ore.; Willamette Iron & Steel Works.
Deming Bronson; Seattle, Wash.; Day Lumber Co.

J. Burdes, Victoria, B. C.; Shawnigan Lake Lumber Co.
David Brown, Bovill, Idaho; P. L. C.
R. J. Barter, Wycliffe, B. C.; Otis Staples Lumber Co.
W. E. Bouscher, Seattle, Wash.; Willamette Iron & Steel Wks.
Swift Berry, San Francisco, Cal.; Forest Service.
Chandler Bloom, Portland, Ore.; U. S. Steel Products Co.
Edward Bray, Spokane, Wash.; U. S. Steel Products Co.
J. E. Blackford, Vancouver, B. C.; Wadhams Oil Co.
Fred C. Briggs, Leavenworth, Wash.; Lamb Davis Lumber Co.
J. E. Buckingham, Portland, Ore.; Standard Steel Works.
G. A. Branson, St. Maries, Idaho; G. A. Branson Lumber Co.
B. T. Bird, Monroe, Wash.; Stephens-Bird Lumber & Logging Co.
Mrs. B. F. Bird, Monroe, Wash.
J. C. Barline, Spokane, Wash.; Washington Mill Co.
H. J. Bailey, Seattle, Wash.; Brodrick & BascomLoggers Supply Co.
Jas. E. Bell, Everett, Wash.
A. B. Buckworth, Vancouver, B. C.
E J. Barry, Tacoma, Wash.; St. Paul & Tacoma Lbr. Co.
Thorpe Babcock, Seattle, Wash.; West Coast Lumber Manufacturers' Assn.

J. D. Chickering, Spokane, Wash.; Holley Mason Hdw. Co.
George M. Cornwall, Portland, Ore.; The Timberman.
John D. Cress, Seattle, Wash.; American Lumberman.
Irving G. Clark, Barneston, Wash.; Kent Lumber Co.
Wilson Clark, Portland, Ore.; Clark & Wilson Lumber Co.
Mrs. Wilson Clark, Portland, Ore.; Clark & Wilson Lbr. Co.
E. T. Clark, Seattle, Wash.; University of Washington.
O. D. Colvin, Seattle, Wash.; Seattle Car & Foundry Co.
E. S. Collins, Ostrander, Wash.; Ostrander Ry. & Timber Co.
Geo. L. Clothier, Pullman, Wash.; Prof. of Forestry State Col.
Frank Culver, Sand Point, Idaho; Sand Point Lbr. & Pole Co
G L. Curkendahl, Spokane, Wash.; Canadian Amer. Lbr. Co.
Wm. Crego, Spokane, Wash.; Cameron Lumber Co.

T. C. Cannon, Hamilton, Wash.; Hamilton Log Co.
C. P. Cronk, Port Haney, B. C.; James D. Lacey & Co.
C. S. Clumpner, Spokane, Waah.; Henry Disston & Sons.
G. W. Cain, Tacoma, Wash.; West Coast Lumberman.
George H. Cecil, Portland, Ore.; Forest Service.
Harry B. Clark, Portland, Ore.; Manufacturing Lumbermen's Underwriters.
M. R. Colby, Portland, Ore.; Colby Eng. Co.
F. W. Chriswell, Seattle, Wash.; Seattle Car & Foundry Co.
I. W. Cook, Moscow, Idaho; University of Idaho, Forestry Department.
H. C. Culver, Sandpoint, Idaho; Sandpoint Lumber & Pile Co.
R. C. St. Clair, Calgary, Alberta; C. P. R., Forestry Branch.
Geo. R. Cartier, South Bend, Wash.; South Bend Mills & Logging Co.
A. E. Clark, Victoria, B. C.; Canadian Panama Timber & Logging Co.
A. W. Clark, Portland, Ore.
A. B. Clark, Portland, Ore.
Peter Connacher, Yacolt, Wash.; Twin Falls Logging Co.
J. C. Clark, San Francisco, Cal.; Willamette Iron & Steel Works.
H. C. Clair, Portland, Ore.; Clarke County Timber Co.
E. F. Cartier Van Dissel, Spokane, Wash.; Phoenix Lumber Co.
A. W. Cooper, Spokane, Wash.; Western Pine Mfg. Assn.
F. N. Cook, Spokane, Wash.; Hallidie Co.
C. J. Chisholm, Seattle, Wash.; Merrill & Ring Logging Co.

W. H. Dunn, Portland, Ore.; Hammond Lumber Co.
Angus David, Bovill, Idaho; Potlatch Lumber Co.
F. J. Davies, Coeur d'Aiene, Idaho; Edw. Rutledge Tmbr. Co
F. J. Durham, Portland, Ore.; E. C. Atkins & Co.
Timber Co.
John J. Dempsey, Tacoma, Wash.; Dempsey Lumber Co.
David Davis, Portland, Ore.; The Timberman.
M. H. Dickinson, Seattle, Wash.; Lidgerwood Mfg. Co.
A. N. Derby, Spokane, Wash.; John A. Roeblings Sons Co.
Allan H. Daugharty, Seattle, Wash.; Ocean Lumber Co.

Fred W. Eastman, Portland, Ore.; Oregon Dennison Block Co.
E. W. Elfendahl, LaMoine, Cal.; LaMoine Lbr. & Trading Co.
F. Elford, Victoria, B. C.; Shawnigan Lake Lbr. Co.
Hugh F. Ellard, Missoula, Mont.
G. P. Eisman, Portland, Ore.; G. P. Eisman Lumber Co.
L. M. Ellis, Calgary, Alta.; C. P. R. Forest Branch.
E. G. English, Mount Vernon, Wash.; English Lumber Co.
Elof Edwins, Preston, Wash.; Preston Mill Co.

Alex S. Fraser, Libly, Mont.; Libly Lumber Co.
Gerald Frink, Seattle, Wash.; Washington Iron Works.
J. H. Frisken, Shelton, Wash.; Simpson Logging Co.
George F. Fox, Bonner, Mont.; A. C. M. Co.
Aird Flavelle, Port Moody, B. C.; Thurston-Flavelle Lbr. Co.
Thomas W. Fea, Dalkena, Wash.; Dalkena Lumber Co.
F. M. Fryberg, Great Falls, Mont.; G. N. Rwy.
H. G. Ferris, Spokane, Wash.; Hoffus Steel & Equipment Co.
L. G. Flasher, Bovill, Idaho; Potlatch Lumber Co.
W. H. Farnham, Clearwater Timber Co.
Joseph Freeman, Aldergrove, B. C.; Aldergrove Lumber & Shingle Co.
Mrs. J. Freeman.
A. Finck, Spokane, Wash.; Wash. Water Power Co.
F. E. Featherston, Spokane Labor Agency (Potlatch & Blackwell).

Robert Gillespie, Seattle, Wash.; Mill & Mine Supply Co.
G. A. Griswold, Portland, Ore.; Columbia Engineering Works.
George L. Gardner, Spokane, Wash.; Lamb Davis Lumber Co.
C. S. Galbraith, Calgary, Alta.; C. P. R. Forestry Br.
G. M. Grisdale, Shelton, Wash.; Peninsula Logging Co.
E. W. Gott, Tacoma, Wash.; Griffin Wheel Co.
E. S. Grammer, Seattle, Wash.; Browns Bay Log Co.
Mrs. E. S. Grammer, Seattle, Wash.; Browns Bay Log Co.
C. W. Gregory, Tacoma, Wash.; West Coast Wire Rope Co.
W. H. Gibbons, Portland, Ore.; Forest Service.
Fred H. Gilman, Seattle, Wash.; American Lumberman.
John A. Goodell, Portland, Ore.; Industrial Y. M. C. A.
A. W. Grier, Los Angeles, Cal.; Cal. Industrial Co.
J. D. Gilmour, Cranbrook, B. C.; B. C. Forest Service.
John Grady, Portland, Ore.; Western Timber Co.
S. E. Gates, Spokane, Wash.; Gen. Elect. Co.
R. N. Gaylord, Rockford, Ill.; Emerson Brantingham Impl. Co.
Robert H. Gaede, Hamilton, Wash.; Hamilton Log Co.

Harry Hanna, Bovill, Idaho; Potlatch Lumber Co.
Howard Hayes, Spokane, Wash.; Great Northern Ry. Co.
R. G. Harrington, Missoula, Mont.; The Polleys Lumber Co.
John Hinchy, Golden, B. C.; Columbia Co.
B. H. Hornby, Dover, Idaho; Dover Lumber Co.
J. A. Healy, Arlington, Wash.; Ebey Log. Co.
W. E. Herring, Seattle, Wash.; Puget Sound Traction, Light & Power Co.
Claude R. Hill, Portland, Ore.; United States Steel Products Co.
J. H. Hightower, Lymon, Wash.; Skagit Mill Co.
W. R. Hawthorne, Potlatch, Wash.; Phoenix Logging Co.
Wm. Helmer, Bovill, Idaho; P. C. Co.
G. F. Hickok, Portland, Ore.; F. B. Mallory Co.
W. F. Hynes, Portland, Ore.; General Electric Co.
T. J. Humbird; Sandpoint, Idaho; Humbird Lumber Co.
A. C. Hanlin, New Kamilchie, Wash.
C. H. Herman, Moscow, Idaho; University of Idaho.
J. A. Humbird, Sandpoint, Idaho; Humbird Lumber Co.
John T. Hornung, Detroit, Mich.; J. T. Hornung.
Jesse B. Hornung, Detroit, Mich.; J. T. Hornung.
L. G. Hornby, Ann Arbor, Mich.; University of Michigan Forestry School.
C. M. Heald. Spokane, Wash.; Springtion Lumber Co.
E. W. Harris, Dalkena, Wash.; Dalkena Lumber Co.
L. T. Hays, San Francisco, Cal.; U. S. Steel Products Co.
H. E. Hansen, Seattle, Wash.; American Steel & Wire Co.
Hugh Henry, Portland, Ore.; Oregon Forest Fire Assn.
H. D. Haley, Portland, Ore.; Lumbermen's Engineering Co.

John Iles, Seattle, Wash.; A. Leschen & Sons Rope Co.
Wm. F. Izett, Oak Harbor, Wash.
A. H. Irving, Spokane, Wash.; Union Iron Works.

MEMBERS, GUESTS AND THEIR LADIES WHO ATTENDED THE FOUR DAYS' SESSION OF THE FIFTH PACIFIC LOGGING CONGRESS HELD AT SPOKANE,

Geo. W. Johnson, Seattle, Wash.; Puget Mill Co.
Goodman G. Johnson, Port Haney, B. C.; Jas. D. Lacey & Co.
T. P. Jones, Potlatch, Idaho; Potlatch Lumber Co.
J. H. Jamisen, Spokane, Wash.; Westinghouse Elec. & Mfg. Co.
Mrs. T. P. Jones, Bovill, Idaho.
Robert Jones, Potlatch, Idaho; Potlatch Lumber Co.
E. A. Johnson, Chicago, Ill.
T. Jerome, Seattle, Wash.; Merrill & Ring Logging Co.

T. E. Kirkwood, Missoula, Mont.; University of Montana.
J. P. Keyes, Bend, Ore.; The Bend Co.
E. H. Knapp, Portland, Ore.
J. J. Kenny, Leona, Ore.; Leona Mills Lumber Co.
Mrs. M. H. Kenny, Leona, Ore.; Leona Mills Lumber Co.
J. C. Kennedy, Cle Elum, Wash.; J. C. Kennedy & Son.
O. M. Kellogg and wife, Hoquiam, Wash.; E. K. Wood Lbr. Co.
J. Frank King, Portland, Ore.; James D. Lacey & Co.

A. W. Laird, Potlatch, Idaho; Potlatch Lumber Co.
Mrs. Jas E. Lansbury, Bovill, Idaho; Potlatch Lumber Co.
James E. Lansbury, Bovill, Idaho; Potlatch Lumber Co.
Gus Luellwitz, Spokane, Wash.; Day Luellwitz Lumber Co.
H. Lane, Sand Point, Idaho; Sand Point Lbr. & Pole Co.
L. Lee, New Kamilchie, Wash.; Port Blakely Mill Co.
A. G. Larbe, Portland, Ore.; Willamette Iron & Steel Co.
E. S. Lawbaugh Ltd., Chicago, Ill.
W. A. Lennom, Flagstaff, Ariz.; Arizona Lumber & Timber Co.
A. F. Latter, Henderson, Mont.; Mann Lumber Co.
Geo. A. Leitch, Cranbrook, B. C.; E. Kootenai Lbr. Co. (Ltd.)
H. D. Langille, Portland, Ore.; James D. Lacey & Co.
Geo. T. Lewis, Seattle, Wash.; Lewis Corporation.
J. Lafon, Victoria, B. C.; British Columbia Forest Branch.

W. E. Mann, Vancouver, Wash., and Portland, Ore.; Mahama Lumber Co.
Duncan L. McKay, Bend, Ore.; The Bend Co.
Clyde M. McKay, Bend, Ore.; The Bend Co.
William B. Michel, Tacoma, Wash.; Nisqually-Russel Car & Locomotive Works.
W. J. Manley, Elk, Wash.; Consolidated Lumber Co.
L. L. Morris, Moscow, Idaho; University of Idaho.
O. P. Munson, Moscow, Idaho; University of Idaho.
D. M. Miller, Seattle, Wash.; Climax Mfg. Co.
E. B. Miles, Eugene, Ore.; Booth-Kelly Lumber Co.
W. H. Motley, Brinnon, Wash.; Izett Lumber Co.
C. E. MacFarlane, Portland, Ore.; Willamette Iron & Steel Works.
Lyle McNeill, Hamilton, Wash.; Hamilton Logging Co.
L. F. Murray, Tacoma (P. O. Lindberg, Wash.), Wash.; West Fork Logging Co.
A. W. MacKimmon, Calgary, Alta.; MacKimmon Lbr. Co.
H. McInnes, Crows Nest, B. C.; H. McInnes.
J. E. Mosley, Seattle, Wash.; John A. Roeblings.
A. W. MacKenzie, Spokane, Wash.; Simonds Mfg. Co.
Fred MacFarlane, Bryant, Wash.; Stimpson Mill Co.
Mrs. Fred McCurdy, Portland, Ore.
F. B. Mallory, Portland, Ore.; F. B. Mallory Co.
R. A. Miller, Bend, Ore.; Miller Lumber Co.
R. W. Mersereau, Doty, Wash.; Doty Lumber & Shingle Co.
L. R. McCoy, Bonners Ferry, Idaho; Bonners Ferry Lbr. Co.
H. J. McCoy, Bonners Ferry, Idaho.
Mrs. J. H. Moore, Victoria, B. C.; Jordan River Lumber Co.
J. H. Mooew, Victoria, B. C.; Puget Sound Lumber Co.
A. J. Morley, Aberdeen, Wash.; Saginaw Timber Co.
D. T. Mason, Missoula, Mont.; Forest Service.
Joseph G. Morgan, Hamilton, Wash.; Hamilton Logging Co.
E. C. Manning, Calgary, Alta.; C. P. R.
E. T. McDonald, Vancouver, B. C.; Vancouver Machinery Depot, Ltd.
F. W. Mallory, Bovill, Mont.; Potlatch Lumber Co.
Renold McDonald, Stillwater, Wash.; Cherry Valley Lbr. Co.
J. P. McGoldrick, Spokane, Wash.; McGoldrick Lumber Co.
Fred McCurdy, Portland, Ore.
J. T. McDonald, Leavenworth, Wash.; Lamb Davis Lbr. Co.
W. C. McMaster, Seattle, Wash.; Southgate Logging Co.
G. H. Martin, Jr., Seattle, Wash.; U. of K.
A. E. Munn, Vancouver, B. C.; Gordon Development Co.
Mrs. W. J. Manley, Elk, Wash.
Tom Moyer, Potlatch, Idaho.

A. M. Oakes, Portland, Ore.; U. S. Steel Products Co.
Jas. O'Hearne, Mt. Vernon, Wash.; English Lumber Co.
Dr. J. Chris O'Day, Portland, Ore.
J. M. O'Brien, Vancouver, B. C.; Brooks-Scanlon-O'Brien Co.
J. S. O'Gorman, Portland, Ore.; Wisconsin Logging & Timber Co.
H. T. O'Connell, Winlock, Wash.; O'Connell Lbr. Co.
John O'Brien, Vancouver, B. C.; Brooks-Scanlon-O'Brien Logging Co.

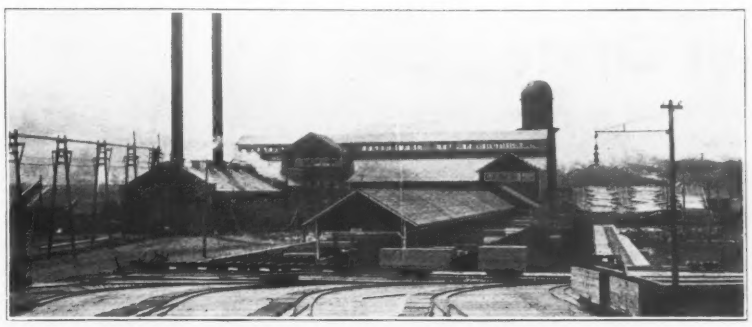
Frank B. Poole; St. Paul, Minn.; Weyerhaeuser & Denkmann.
George A. Peck, Kerriston, Wash.; Northwest Lumber Co.
J. H. Pottinger, Ann Arbor, Mich.; University of Michigan Forestry School.
Carlos A. Pennington, Seattle, Wash.; General Appraisal Co.
W. W. Peed, Eureka, Cal.; Hammond Lumber Co.
Charles H. Putnam, Spokane, Wash.; Great Northern Ry.
A. H. Powers, Marshfield, Ore.; Smith-Powers Logging Co.
Geo. W. Peavey, Corvallis, Ore.; Oregon Agricultural College.
R. D. Prettie, Calgary, Alta.; Supt. Forestry Br. C. P. R.
E. G. Polleys, Missoula, Mont.; Polleys Lumber Co.
B. F. Pierce, Orin, Wash.; Winslow Lumber Co.
Alva W. Person, Portland, Ore.
G. Pippson, Potlatch, Idaho.
E. J. Palmer, Chemainus, B. C.; Victoria Lumber & Mfg. Co.
Glen Pierce, Seattle, Wash.; Seattle Car & Foundry Co.
John Pearson, Portland, Ore.; Nehalem Timber & Logging Co.
Jack Pigeon, Crows Nest, B. C.; Crows Nest Pass Lumber Co.

J. S. Quigley, Bryant, Wash.; Florence Logging Co.

W. F. Richardson, Seattle, Wash.; John A. Roeblings Sons Co.
A. L. Remlinger, Aberdeen, Wash.; John A. Roeblings Sons Co.
G. A. Rubedew, Spokane, Wash.; Rupp & Holland.
W. G. Ransom, Bettendorf, Iowa; The Bettendorf Co.
C. C. Rice, Spokane, Wash.
J. P. Reardon, Spokane, Wash.; McGoldrick Lumber Co.
R. N. Riblet, Spokane, Wash.; Riblet Tramway Co.
D. C. Riblet, Spokane, Wash.; pres. Riblet Tramway Co.
H. J. Robinson, Portland, Ore.; Westinghouse Air Brake Co.
J. E. Riley, Seattle, Wash.; Lewis Corporation.
A. N. Riggs, McCormick, Wash.; McCormick Lumber Co.

G. A. Spencer, Portland, Ore.; Kane Mfg. Co.
J. H. Spaulding, St. Joe, Idaho; Michigan Land & Lbr. Co.
H. M. Strathern, Post Falls, Idaho; Post Falls Lumber & Mfg. Co.
H. C. Stimson, Seattle, Wash.; Stimson Mill Co.
C. H. Shattuck, Moscow, Idaho; University of Idaho, Forestry Department.
W. R. Schofield, Moscow, Idaho; University of Idaho.
Arthur W. Sapp, Bordeaux, Wash.; Mason County Logging Co.
Dorr Skeels, Logging Engineer U. S. Forest Service, Dist. 1.
Hugh R. Sutherland, Hamilton, Wash.; Dempsey Lumber Co.
C. A. Stewart, Portland, Ore.; Stewart Bros. Co.
W. A. Scott, Seattle, Wash.; Pacific Builder & Engineer.
D. E. Stewart, Knappa, Ore.; Big Creek Log. Co.
Mrs. D. E. Stewart, Knappa, Ore.; Big Creek Log. Co.
H. W. Sessoms, Arlington, Wash.; Ebey Logging Co.
W. A. Selwood, Portland, Ore.; Y. M. C. A.
R. H. Shotwell, Fairfax, Wash.; Manley-Moore Lumber Co.
J. W. Stewart, Bonners Ferry, Idaho; Bonners Ferry Lbr. Co.
C. I. Sersanour, Portland, Ore.; Willamette Iron & Steel Works.
F. S. Stevens, Enderby, N. C.; Okanagan Saw Mills.
F. A. Silcox, Missoula, Mont.; U. S. Forest Service.
I. A. Shorno, Spokane, Wash.; General Electric Co.
George Stoddard, LaGrande, Ore.; Grande Ronde Lumber Co.
A. Schofield, Seattle, Wash.; Merrill & Ring Logging Co.
George Spence, Spokane, Wash.; E. C. Atkins & Co.
Tom M. Shields, Seattle, Wash.; Simonds Mfg. Co.
R. E. Shaw, Tamarac, Idaho; Shaw Logging Co.
George Sieler, Portland, Ore.; Seattle Car & Foundry Co.
E. E. Shaw, Portland, Ore.; Henry Disston & Sons.
Chester O. Staples, Wyckliffe, B. C.; The Otis Staples Lumber Co., Ltd.
Samuel A. Stamm, Hamilton, Wash.; Hamilton Lumber Co.
E. L. Staples, Wycliffe, B. C.; Otis-Staples Lumber Co. (Ltd.)
Mrs. Arthur W. Sapp, Bordeaux, Wash.; Mason County Logging Co.
Peter Smith, Portland, Ore.

Mrs. Anna H. Toole, Missoula, Mont.
John R. Toole, Missoula, Mont.; A. C. M. Co., Lumber Dept.
J. E. Totman, Hamilton, Mont.; A. C. M. Co., Lumber Dept.
L. L. Tyler, Tacoma, Wash.; Turtle Back Log Bunk & Car Stake Co.



THE POTLATCH LUMBER COMPANY'S PLANT AT ELK RIVER, IDAHO.

James T. Thornton, Portland, Ore.; Lidgerwood Mfg. Co.
Mrs. J. E. Totman, Hamilton, Mont.
C. A. Tindall, Seattle, Wash.; Brodrick & Bascom Wire Rope Co.
I. J. Treade, Spokane, Wash.; Inland Paper Co.
E. F. Tindolph, Seattle, Wash.; Grand Rapids Veneer Works.
A. A. Teel, Indianapolis, Ind.; E. C. Atkins & Co.
George Thorp, Moscow, Idaho; State.
H. A. Thompson, Spokane, Wash.; Gorham-Revere Rubber Co.
J. G. Thatcher, Portland, Ore.; John A. Roebling's Sons Co.

D. S. Updegraff, Vancouver, B. C.; Vancouver Equipment Co., Ltd.

E. V. Vachon, Portland, Ore.; Seattle Car & Foundry Co.
R. W. Vinnedge, North Bend, Wash.; North Bend Lumber Co.
Jno. P. Van Orsdel and Wife, Portland, Ore.; Portland Lumber Co.
Griswold van Dyke, Seattle, Wash.; Midvale Steel Co.
J. A. Vance, Malone, Wash.; Vance Lumber Co.
W. Vaughan, North Bend, Ore.; McDonald & Vaughan.

J. P. Weyerhaeuser, St. Paul, Minn.; Weyerhaeuser & Co.
A. F. Wilbur, Tacoma, Wash.; St. Paul & Tacoma Lbr. Co.
George Weisel, Missoula, Mont.
A. C. White, Laclede, Idaho; A. C. White.
J. P. Wilson, C. D. A., Idaho; Weber Logging & Timber Co.
Hugo Winkenwerder, Seattle, Wash.; College of Forestry, University of Washington.
Wesley E. Wells, Somers, Mont.; Somers Lumber Co.
M. H. Wolff, Coeur d'Alene, Idaho; O. S. F. S.
Asa S. Williams, Vancouver, B. C.; Canadian Allis-Chalmers.
T. L. Williams, San Francisco, Cal.; Lidgerwood Mfg. Co.
C. S. Webster, Spokane, Wash.; Forestry Dept., Indian Service, U. S.
F. Wilkinson, Vancouver, B. C.; Wilkinson Co. (Ltd.).
A. Whisnant, Portland, Ore.; The Timberman.
G. K. Wentworth, Portland, Ore.; Portland Lumber Co.
B. L. Willis, Newport, Wash.; Fidelity Lumber Co.
A. F. Wilbur, Tacoma, Wash.; St. Paul & Tacoma Lumber Co.
John S. Wilson, Seattle, Wash.; Washington Iron Works.
Effie M. Wilson, Seattle, Wash.
C. F. Wright, Portland, Ore.; Ballou & Wright.
L. T. Wright, Everett, Wash.; Sultan Ry. & Timber Co.
W. H. Weber, Coeur d'Alene, Idaho; Weber Logging & Timber Co.
F. W. Waterman, Kamiah, Idaho; Ransom-Worly Lumber Co.

W. C. Yeomans, Pell, Wash.; W. C. Yeomans.
J. D. Young, Kelso, Wash.; Inman-Poulsen Logging Co.

CONVENTION NOTES.

Red, white and blue proved to be more popular than ever. A red ticket meant a free lunch Friday; a blue one gave you a lunch on Thursday and a white ticket entitled the holder to Friday night's sumptuous banquet.

There was one exception to the no-exhibit rule at this year's congress that being the Industrial Y. M. C. A. which had a very attractive exhibit showing what was being done at various camps where the Y. M. C. A. has been installed.

A. W. Clark was present, having just returned from Europe, and he thought he was still sight-seeing. The monkey cages were particularly attractive to him.

Dr. Schenck and E. F. C. VanDissel sat together in the front row and exhibited the latest designs in German and Dutch hirsute adornments.

Dr. Schenck and Thorpe Babcock tied for the honor of being the tallest man present not a logger.

Other good names were Prettie, Sersanour, Tindolph, Bird, Winkenwerder.

Most of those present thought that R. W. Vinnedge, of North Bend, Wash., was going to deliver the invocation until he got started. Even then the ladies present wouldn't believe he was a logger.

With Dr. Schenck's text books, Roebling's stillettos and playing cards, Nisqually-Russel souvenir badges, Grand Rapids Veneer Works whetstones, not to mention Lidgerwood literature, it would have been better if the philanthropic doctor had provided suitcases for each of the visitors instead of only one for the entire bunch.

When it came to oratory the "O's" seemed to have it. Did anybody miss "Jim" O'Hearne's "Logging Engineer?"

Probably A. W. Cooper was the busiest man in town. As the local lumbermen were the hosts, and by local should be included the Inland Empire, naturally the secretary of the Western Pine Manufacturers' Association was one of the active members of the local entertainment committee. Hats off to Mr. Cooper; he has proved his entertaining powers. He even entertained the lady musicians while H. M. Strathern was for the moment otherwise engaged.

Read the list of those in attendance and see that Jack Pidgeon from Crows Nest was there. Now will you say there's nothing in a name?

The German colony was represented by Donovan, O'Day, O'Connell, O'Hearne, O'Gorman, O'Brien, O'Toole.

John P. Weyerhaeuser, of St. Paul, who is president of the Rutledge Lumber Company, with timber holdings tributary to Coeur d'Alene, was a very much interested attendant at the hearings. Mr. Weyerhaeuser plans to spend the winter in Spokane, and will be joined in a few days by Mrs. Weyerhaeuser. He accompanied the party on the trip to Potlatch and was pleased in that everyone enjoyed the trip so much. His brother, Charles A. Weyerhaeuser, of Little Falls, Minn., is president of the Potlatch Lumber Company.

The Lidgerwood Manufacturing Company was represented at the congress by M. H. Dickinson, of Seattle, western manager, and J. T. Thornton, Portland, Ore.; T. L. Williams, San Francisco; A. S. Williams, Vancou-

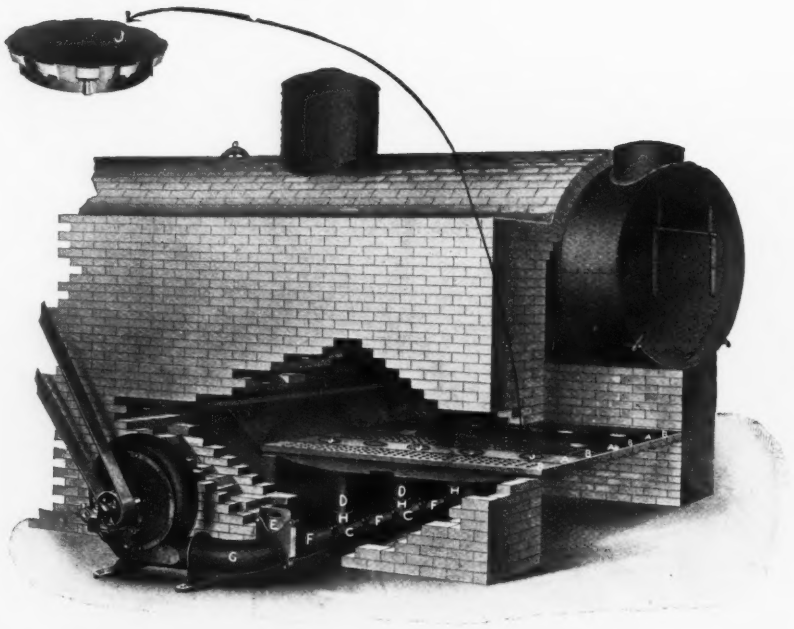
WASH., SEPTEMBER 24, 25, 26 AND 27, DURING WHICH MUCH SPIRITED DISCUSSION LOOKING TOWARD THE ADVANCEMENT OF LOGGING TOOK PLACE.

DO YOU LACK STEAM?

We Can Help You.

We Have Helped Others, Why Not You?

Why ever be bothered with insufficient steam?
Why burn your slabs when you can sell them?
Why waste your sawdust when you can use it for fuel?
Why be at the mercy of the elements?



The Gordon Hollow Blast Grate

Develops every ounce of power a boiler is capable of generating.

Adds from 20 to 50% to the efficiency of a boiler.

Burns **any** kind of mill refuse — sawdust, hog chips, bark, blocks, edgings or slabs.

Gives as good results with **wet, green or frozen sawdust** as a draft grate gives with **dry wood.**

Affords perfect control over the fire at all times. You can regulate it as readily as a gas fire.

Renders you independent of the weather. You have a **positive** draft, which can be regulated to suit the conditions.

Saves labor in firing.

Reduces your fire hazard by burning up all litter as fast as made, thus keeping your premises clean.

Is so durable that in the end it is far cheaper than a draft grate. Being hollow and a current of fresh air constantly passing through it, it keeps comparatively cool.

NO EXPERIMENT.

On the market many years. Used in every state in the Union and in every lumber-producing country on the face of the globe. Recommended by thousands of users.

SOLD ON APPROVAL.

We will ship any responsible party west of the 95th meridian an outfit for his furnaces or ovens with the written understanding that he may have **thirty days** from date of installation in which to test it, and that, if it is not entirely satisfactory to him, he may return it and we will pay the freight both ways. (For the trade west of the Rocky Mountains, with the exception of Colorado and New Mexico, the Gordon Hollow Blast Grate is being manufactured and sold under license from us by the Puget Sound Machinery Depot, of Seattle, to whom inquiries and orders from that territory should be addressed.)

Can be used in any kind of a furnace or oven, with any kind of a boiler, and with any number of boilers, from one up. No change in construction required. Easy to install. Usually put in on Sunday, even a large outfit requiring only a few hours to install. Anyone can operate it. No sealed ash doors. Does not supplant the draft, but merely supplements it. Can be fired on at night without the blower, if desired. Regular lengths, 48, 54, 56, 60, 66, 72, 78, 84, 90 and 96".

Information required to submit proposal.

Number, diameter and length of boilers? Furnaces or ovens? Width and length of grate surface or surfaces? Character of fuel you desire to burn?

Having been in this business so many years, we think we may reasonably claim to be experts.

Gordon Hollow Blast Grate Co., Greenville, Michigan.

MANUFACTURERS OF

THE GORDON HOLLOW BLAST GRATE and THE "TOWER" LINE OF EDGERS AND TRIMMERS.

(See Opposite Page.)

SUPERIOR EDGERS AND TRIMMERS

for portable and small and medium size stationary mills.

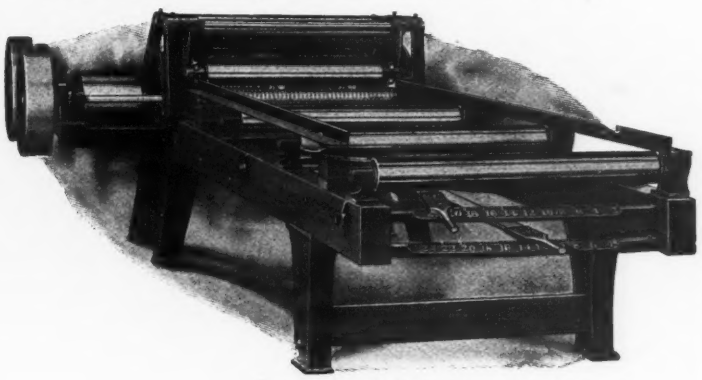
THE CELEBRATED "TOWER LINE"

HUNDREDS IN USE

83 regular sizes and styles of gang edgers 83

18 regular sizes of 2-saw trimmers 18

Gang edgers for portable and small stationary mills of from 15 H. P. up.
Gang edgers for portable and small stationary mills cutting from 5,000 to 20,000 feet in ten hours.
Gang edgers for mills cutting up to 30,000 feet in ten hours.
Gang edgers for mills cutting up to 40,000 feet.
Gang edgers for larger mills.
Gang edgers with levers to shift the movable saws.
Gang edgers with hand wheels to shift them.
Gang edgers 30, 32, 36, 42, 48, 54, 60 or 66 inches wide in the clear between guides.
Gang edgers with 14, 16, 18, 20, 22, 24 or 26-inch saws.
Gang edgers to cut stock up to 3, 4, 5, 6, 7 or 8 inches in thickness.
Gang edgers with any number of saws, from two up.



Rear table not shown.

Steel levers.—One-piece bed.—Integral feed roll boxes.—Separate index for each movable saw.—Indexes at front end of front table, away from dust and in plain view of operator.—Indexes adjustable to adapt edger to cut scant, exact or plump.—Steel guides.—Removable bridgetree **cannot** sag nor get out of alignment in any other way.—Saws easily and quickly removed.—Movable saw collars never bind.—Saws may be set by quarter inches.—Feed rolls solid steel.—Feed rolls positive, but do not mark lumber.—Feed rolls cannot possibly get out of alignment.—Each shifter sleeve has 8″ bearing on the shifter rod.—Shifter sleeves **cannot** bind.—Each saw collar has 4″ bearing on the arbor.—Front and rear tables each ten feet long.—Five large table rolls.—Every part made to template and interchangeable.—Every part lettered, to facilitate ordering duplicates in case of fire or other accident.

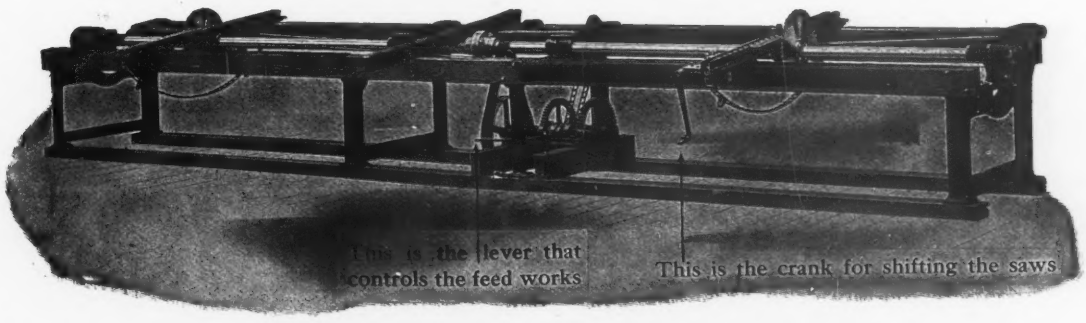
Trimmers that enable one man to easily trim the output of a mill cutting up to 30,000 feet in ten hours.
Trimmers for mills cutting up to 50,000 feet in ten hours.
Trimmers cutting from 6 to 16, 6 to 18, 6 to 20, 6 to 22, 6 to 24, 6 to 26, 6 to 28, 6 to 30 or 6 to 32 ft.
Trimmers with 18, 20, 22 or 24-inch saws.
Trimmers to trim stock up to 4, 5, 6, 7 or 8 inches in thickness.

Simple, substantial, practical.—Composed of two equal sections, coupled with heavy iron plates.—Do more work in a given length of time with less fatigue to the operator and do it more accurately than any other trimmer made.—Operator always at end of board.—Operator can see instantly how to trim lumber with least waste and to best advantage.—No link belt used to move either saw.—Lost motion in saw-shifting mechanism absolutely and permanently eliminated.—Transfer blocks **cannot** bind.—Transfer blocks **always** exactly parallel to each other and at right angles to arbor.—**Impossible** for one end of transfer block to get ahead of other end.—Two feeds, which may be started, changed or stopped without stopping the machine itself.—Feed works composed of heavy pinions and gears.—Removable bridgetrees.—Six long arbor bearings.—Two arbor bearings traveling with saws.—Movable arbor bearings support lumber where strain is greatest and also sustain it when bridgetrees are removed for purpose of taking off saws.—Iron legs, cast in pairs, with upper and lower cross girts—all in one piece.—Transfer blocks built up from steel angles and steel channels.—Transfer blocks compact, light and strong.—Every part made to template and hence interchangeable.—Every part branded.

GORDON HOLLOW BLAST GRATE CO., Greenville, Michigan.

Also Manufacturers of

The Celebrated Gordon Hollow Blast Grate.



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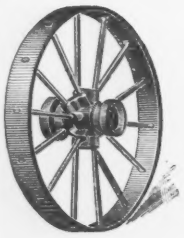
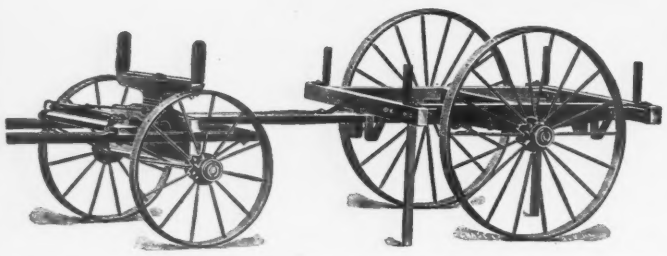


STEEL WHEELS FOR LUMBER BUGGIES, LOG CARTS, WAGONS, Etc. ANY SIZE—ANY CAPACITY—TO FIT ANY KIND OR SIZE OF AXLE. STEEL AXLES—LUMBER BUGGIES—LOG WAGONS — CARTS — TRACTION WAGONS—GASOLINE - KEROSENE TRACTORS.

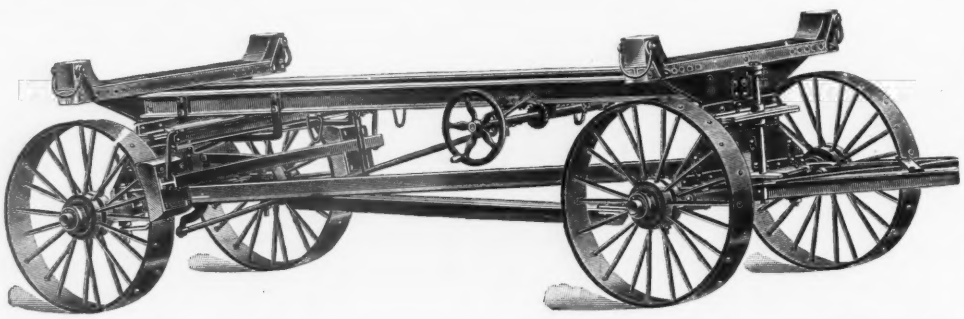


OUR ELECTRIC LUMBER CART.
One forward truck will keep a dozen rear trucks going.
Only a couple of minutes required to couple or uncouple the trucks.

STEEL WHEELS to replace wood wheels as they break down on your wagons and carts—never affected by the weather—made any size—any capacity—any width or thickness of tire—to fit any axle. Wrought steel tires and spokes, spokes being up-set in the tires at a welding heat and staggered in the hub. The molten grey iron forming the hub is poured around the spokes, uniting with them and making a solid one piece wheel. There are no tires to be re-set, no spokes to work loose, and no boxes to be replaced, therefore, no repairs are needed and furthermore, our steel wheels will last from three to four times as long as the ordinary wood wheels.

STEEL AXLES, round or square, bent or arched to suit requirements, any capacity, with or without roller bearings. We also furnish wood axles.

OUR S-211 TEN TON CROSS REACH LOG AND LUMBER WAGON



LUMBER BUGGIES, LOG WAGONS AND CARTS—either wood or steel construction—any capacity, equipped with our everlasting steel wheels, with or without roller bearings—built to suit customers' requirements.

GASOLINE TRACTORS are coming more and more into use for logging and lumbering operations and with a view of meeting the various needs of the lumberman, we have designed our **"ALLWORK"** line of gasoline-kerosene tractors. They combine greatest efficiency with least possible weight.

OUR LOGGING AND FREIGHTING WAGONS for team and traction hauling are considered the standard in their line. Either wood or steel construction—any capacity up to 30 tons. We equip some of our wagons with the cross reach feature which enables a train of the wagons to follow in the exact track of the traction engine.

For further particulars address:

ELECTRIC WHEEL CO., Mfrs.

Box 215, QUINCY, ILL.

Cable Address: ELECTRIC-QUINCY.
Western Union Code.

ver, B. C., and J. S. Wiley, of Seattle. A. L. Wright, the Spokane representative, is in the East and was unable to be back in time.

A. W. Clark, of Portland, Ore., for years engaged in logging on the lower Columbia River, attended the congress, accompanied by his son, A. B. Clark. A. W. Clark and his two sons, A. B. and W. B. Clark, have just returned from a tour of Europe.

Jim Young expressed his idea as to the welfare of the lumberjack as follows: "Make the logger an honored and respected citizen—a higher type of man."

Among the supply men the wire rope concerns were strongly represented. The United States Steel Products Company's representatives included Chandler Bloom, sales agent; Edward Bray, C. R. Hill and A. M. Oaks, Portland; L. T. Hays, tramway engineer, San Francisco; H. E. Hansen, Seattle, and F. Wilkinson, of the Wilkinson Company (Ltd.), Vancouver, B. C.

The John A. Roebling's Sons Company delegation consited of W. F. Richardson and Jack Moseley, Seattle; J. G. Thatcher and R. L. Adams, Portland; A. L. Remlinger, Aberdeen; A. N. Derby, Spokane.

Other wire rope men in evidence were: John Iles, Seattle, A. Lescher & Sons Rope Company; C. W. Gregory, Tacoma, West Coast Wire Rope Company; H. J. Bailey, Seattle, Broderick & Bascom Loggers' Supply Company; and C. O. Tindall, Seattle, Broderick & Bascom Loggers' Supply Company.

OTHER ADDRESSES.

The following interesting and valuable papers were prepared for the Congress but not read. They are here published in full for the benefit of readers of the AMERICAN LUMBERMAN:

YARDING AND LOGGING.

By James McNaughton, of Vancouver, B. C., Who Told of Facilitating Methods.

In presenting this suggestion for the consideration of members of the Pacific Logging Congress, I would first like to explain that it has always occurred to me that in the loading of logs on to cars for transit by rail, with an ordinary yarding engine and gin pole, or other device, the practice of building landings is not only costly in time and labor taken in their construction but that many good logs are invariably used in making them.

It therefore occurred to me that this might be overcome by the use of a separate donkey, of a smaller type than that used for yarding, for loading the logs direct from the ground on to the cars; and that by raising the lead block of the yarder to a suitable height the logs could be piled in such a manner that they could be taken direct by the loading engine without the necessity for a landing.

I tried this out and obtained most satisfactory results, the increased output more than compensating for the extra expense for wire rope for guy lines, while the crew remains practically the same.

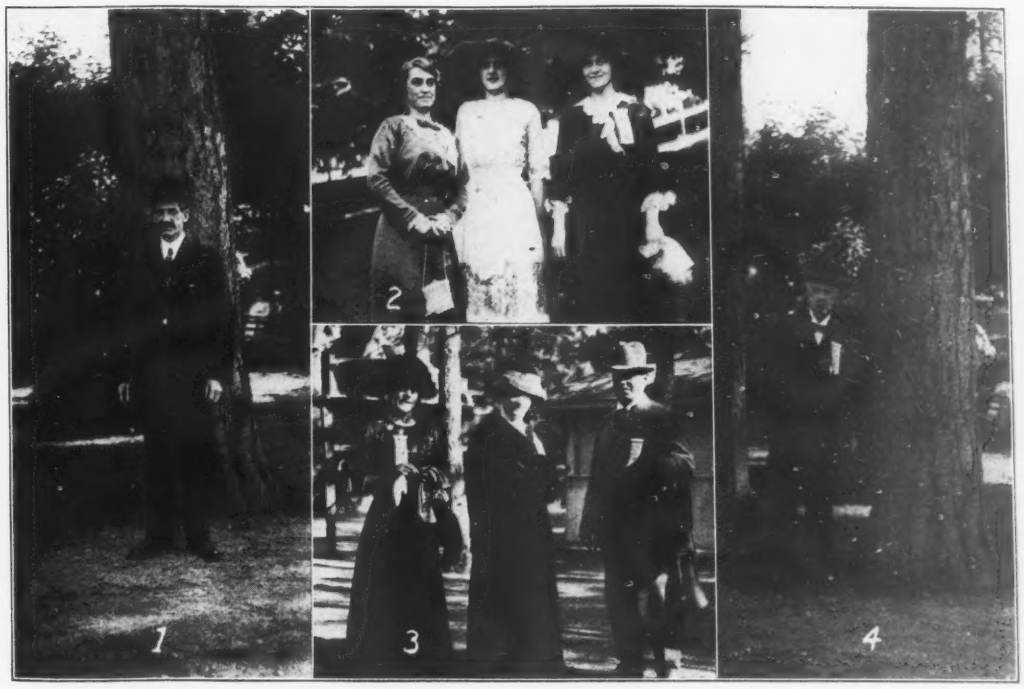
The scheme I adopted was as follows:

A suitable spar tree was selected close to the track. This was topped off and at the foot of it both the yarding and the loading engines were placed practically side by side.

The spar tree was guyed by five lines to give it rigidity, two of them so arranged that they admitted of the loading block being fastened to them by two chains, as will be described later.

The general arrangement of guying was that four of the lines crossed the railway track at radii forming a semicircle, as near as could be permitted in providing a clear way for the passage of loaded cars. The fifth guy was placed midway between the two outer ones of these four in the opposite direction or in the direction from which yarding was to be done. Thus there were four guys taking the strain of the yarding line when in action, the fifth counteracting any tendency these four might have to draw the spar in their direction. They were fastened at a height of between 75 and 90 feet from the ground on the spar tree and lead out to stumps.

As stated previously, the two machines were placed as near the foot of the tree as possible, both on the same side of the track yarding was to be carried on, the loading engine next to the rails.



INTERESTING PERSONALITIES PHOTOGRAPHED DURING THE ANNUAL PACIFIC LOGGING CONGRESS.
(1) H. C. Culver, President, Sandpoint Lumber & Pole Company, at the Congress. (2) The Spokane Ladies Who Sang: Mrs. Charles Freese, Miss J. D. Allen, Mrs. E. Langley. (3) (Left to Right) Mrs. Knapp, Portland, Mrs. J. J. Donovan, J. J. Donovan. (4) John O'Brien, Vancouver, B. C., a former American Logger of Irish Extraction.

Yarding.

A yarding block was hung by a chain passed around the spar as near to the guy line fastening as possible, but so arranged that the block itself was about 6 feet from it, hanging by the chain. This block had a 24-inch sheave with as large a pin as possible and steel separator to lessen the friction.

The yarding line was passed direct from the drum through the block then out to woods in precisely the same manner as when used in yarding to the landing, the haulback line being put out in the ordinary way and made fast to it.

I found that in using a yarding line so arranged, logs could be brought in more quickly, without sniping, and very little swamping, as the log had a tendency to raise from the ground, leadway end first, as it came in. I also found that when the log met with an obstacle such, for instance, as a stump, or rotten windfall, it rode clear over it. Moreover the line on taking a greater strain would pick it up so that it always was in the clear instead of siwashing around stumps, as is so usual in ordinary yarding. In bringing the logs to the spot for loading they are piled one on top of the other as close to the track as possible without actually putting them on to the right-of-way. In this manner logs can be piled up regardless of whether loading is going on or not.

Loading.

Two loading blocks were used, one hanging from the spar tree similar to the yarding block, but just above it on the opposite side of the tree. The other was fastened on to one of the guy lines about two-thirds up so that the loading line hung plumb over the center of the track or car to be loaded. The loading line is placed direct from the drum through the block on the spar tree, thence through the loading block on the guy line. To the end of the loading line a pair of tongs was attached with which all loading was done. The weight of the tongs was sufficient to bring the line down and prevented its running back through the block. The tongs were carried out to the log to be loaded, by one of the loaders, fastened to it, and from that position it was loaded directly onto the car.

The total crew used was fifteen men for all purposes and the increase in the output, in my opinion, demonstrated that this method of rigging surpasses the ordinary system. The extra expense is the initial cost of wire rope for guy lines, which is quickly made up by the saving in building landings and in the wear and tear of yarding line.

A change in position of machine is made in the same manner as from one end of a landing to the other. The yarding block remains in the same position, but the loading block is changed from one guy line crossing the track to the other of the two alluded to in the early part of this article, as will be seen from a rough sketch attached hereto.

JAMES McNAUGHTON, OF VANCOUVER, B. C., AND HIS LOG HANDLING APPARATUS.

MAKES INTERESTING COMPARISONS.

By H. W. Sessoms, of Arlington, Wash., Who Tells of Coal, Oil and Wood Costs.

If you question loggers regarding the cost of wood for donkey fuel the majority of them will tell you that logs used for that purpose have no commercial value. My observation in our camp and in other camps that I have visited, where they are not operating in old growth, defective timber convinces me that wood is more expensive than either coal or oil.

About four years ago while operating in sapling timber, we scaled the logs used for fuel from time to time and found the average to be about 1,000 feet per day per donkey; the crew could put these logs on the car more quickly than they could them behind the donkey for the wood cutter. The cost as we figured it is as follows:

Cost of Wood Fuel.

Value of logs, 1,000 feet on car	$8.00
Wood cutter's wages	2.75
Total cost per day	$10.75

We then changed our grates and used coal and found the cost per donkey to be as follows:

Cost of Coal.

1½ tons coal at $4.25, delivered.....$6.38

After using coal about two years we found that while coal had a decided advantage over wood in cost it did not decrease the fire risk, so we equipped one donkey and one locomotive for burning oil and after trying it out for thirty days we equipped our entire outfit with oil burners and find the average cost as follows:

Cost of Oil Fuel.

Donkey, 6 barrels of oil per day, $1.10.....$6.60

A great many people will tell you that donkey or other boilers that are not equipped with submerged heads will not stand oil fuel and I will admit that during the first six months we had considerable flue trouble; by that time we had learned that there were two causes for this trouble.

Difficulties Encountered in Oil Burning.

Trouble No. 1. In equipping for oil the exhausts are removed from the stack and put on the outside and the oil people, to eliminate any possibility of not being able to keep steam, put in blowers; the green fireman felt that it was part of his duty to use the blower constantly. The sudden expansion and contraction did not agree with the boiler tubes, so we took the blowers out.

Trouble No. 2. The cone of our stacks were set close to the boiler heads with holes cut through for the exhaust pipe. The consequence was when we did not get perfect combustion in the fire box, the escaped gases exploded as soon as they came in contact with air at the boiler head.

How the Problem Was Met.

We overcome this trouble by having cylinders made 18 inches in height with creases on the outside for the exhaust pipe. These cylinders were bolted to the boiler head with asbestos cardboard between to exclude all air. The old stacks were hinged to the top of these cylinders; we also put hinged dampers to the top of the stacks. These are dropped when we close down at noon and night; this keeps the air from passing through the flues and makes the contraction less rapid, in addition to keeping steam in the boiler much longer.

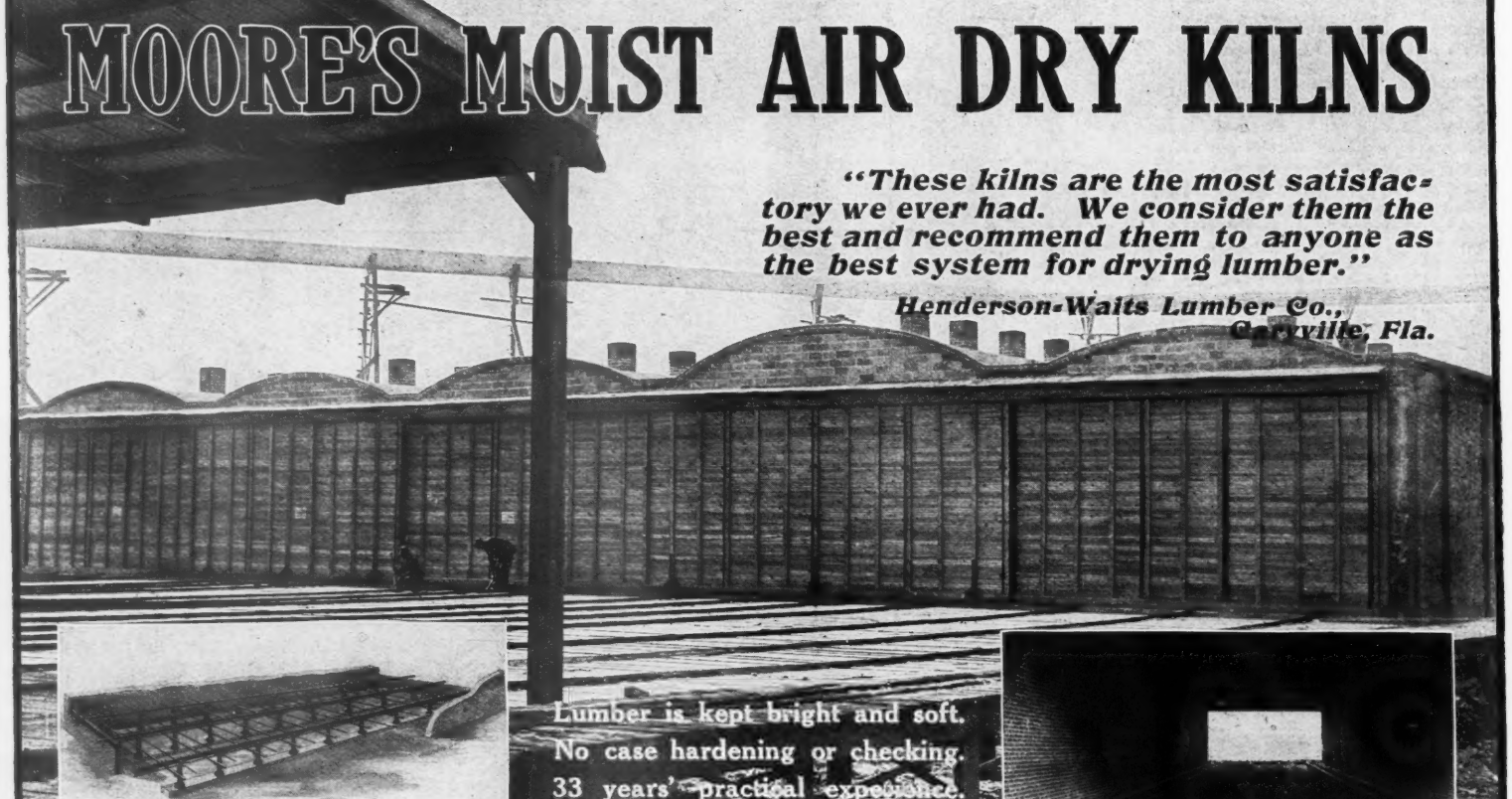
Method of Putting Tubes in Donkey Boilers.

In connection with putting tubes in a donkey boiler, there is one point to which I wish to call your attention; there is no doubt in my mind that a large percentage of tubes are ruined by having the life rolled out of them by men who do not thoroughly understand rolling tubes. In replacing tubes in our boilers we found some of them rolled ¼-inch larger than their normal size and the edges of the head-holes had cut practically through the tubes. In replacing the tubes we made a die for our power press, one inch of which was swedged ⅛ of an inch, and swedged the tubes in this die. We then used 1/16x½ band iron for ferrules and used 1¾-inch expander and finished the work with a 2-inch expander. This eliminates the cut on the outside of the flue when rolled.

Comparative Cost of Coal and Oil for Fuel in Locomotives.

Our logs are hauled over Marysville & Arlington Railway with a 60-ton Shay locomotive. The distance from our camp to our dump at Marysville is 20 miles. This engine makes two trips each day, making 80 miles a day. We have had a very good opportunity to compare the relative cost of

MOORE'S MOIST AIR DRY KILNS



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No case hardening or checking.
33 years' practical experience.
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Atlantic Coast Lumber Corporation, Georgetown, S.C. (This order takes the world's record)	28 Kilns
W. R. Pickering Lumber Co., Haslam, Tex.	12 "
The National Steel Car Co., Ltd., Hamilton, Canada	3 "
Henderson-Waits Lumber Co., Caryville, Fla.	5 "
Hamilton Ridge Lumber Co., Estill, S. C.	6 "
The Great Eastern Lumber Co., Savannah, Ga.	5 "
Halifax Lumber Co., Norfolk, Va.	2 "
Richmond Cedar Works, Richmond, Va.	3 "
East Coast Lumber Co., Watertown, Fla.	4 "
King Lumber Co., Prentice, Ala.	2 "
Flowers Lumber Co., Jakin, Ga.	4 "
W. T. Smith Lumber Co., Chapman, Ala.	2 "
J. M. Griffin, Nomac, Miss.	2 "
Tallahatta Lumber Co., Montrose, Miss.	1 Kiln
Dayton Lumber Co., Dayton, Tex.	3 Kilns
Louisiana Saw Mill Co., Ltd., Alexandria, La.	4 "
Milltown Lumber Co., Milltown, Ga.	3 "
Florida & Alabama Land Co., Pensacola, Fla.	2 "
Byrd-Matthews Lumber Co., Gainesville, Ga.	2 "
Taylor County Lumber Co., Perry, Fla.	3 "
Jordan River Lumber Co., Kiln, Miss.	2 "

We overhaul and change old Kilns as well as building new ones. Write us for catalog and full particulars.

L. MOORE DRY KILN COMPANY, Jacksonville, Florida

coal and oil in this particular engine and find the comparison to be about as follows:

With coal, making five trips, averaging 120,000 a trip, or 600,000 feet of logs, it took fifteen tons of coal at $4.25 a ton	$63.75
With oil, making five trips, averaging 120,000 per trip, or 600,000 feet of logs, it took 45 barrels of oil at $1.10 a barrel	49.50

This shows a saving in cost of $14.25 on five trips, or $2.85 a trip in favor of oil. But if the cost of oil was as much as or more than coal, the fact that it eliminates fire risk to a large extent, is, in my opinion, a very strong factor in its favor.

Experience With a Small Foundry in a Logging Camp.

In connection with our machine shop we have a foundry in our camp that we consider a good investment. We employ a molder who sets his molds and takes off one cast a week, or an average of 4,000 pounds at the following cost:

Molder, six days at $4.00	$24.00
Four helpers while pouring, two hours	3.00
One-half ton coke	4.00
4,000 pounds scrap iron at $9.00	36.00
Steam for running blower	3.00
Total cost of 4,000 pounds of castings	$70.00

Or 1¾ cents per pound.

For the last two years we have made all the castings used in our camp at this price, which is about one-half of the cost prior to that time. In addition to car and locomotive casting we make stove parts, block sheaves, cylinder heads and rings; and, in fact, anything we may need. There are times when the machinist would not be busy if it were not for the foundry. When he is not busy with other work there are always castings to be bored or planed or bushings to be put into sheaves. In addition to this saving we recast our old castings; I would say offhand, that we get 25 percent of our cast back to be recasted.

If we should happen to break a casting that we do not have in stock we can always get it out within a few hours. Every logger can thoroughly appreciate this advantage. In my opinion no logging camp machine shop is complete without a foundry.

The Gasoline Donkey.

About two years ago we bought a 20-horsepower Krauskoff gasoline donkey for building landings, and we consider it one of the best machine investments we have ever made. It has many advantages over a steam donkey for this purpose. It can be loaded or unloaded from the end of a car in less than half an hour; it does not set fires; it does not waste fuel when there is no work for it, as it can be stopped or started at a moment's notice. When we are building landings ahead of the steel, we do not have to worry about getting water and fuel to it. The actual run of the machine would average about five hours a day; one bucket of water and 5 gallons of gasoline will run it for this length of time; cost for fuel and oil about $1. When the machine is not running the engineer helps the landing men, cutting skids or grading.

A 20-horsepower machine is large enough for ordinary landing building, but if one wishes to do much scraping with a 1½-yard Bagley scraper, I would advise a 40-horsepower machine with the haulback geared at the same speed as the main drum. The machine we have was made for clearing land and the haulback geared at a very high speed, to give a quick return of the main line. When we used the scraper we had to slow down the haulback by putting on a larger sprocket, as the return weight was too heavy for the speed; but even with that change we consider our machine too light for heavy scraping.

STEEP HILLSIDE LOGGING.

By H. W. Sessoms, Arlington, Wash.—Solution of Difficult Problem With Specially-Designed Machinery.

Except in a general way it is hard to deal with this subject, as each hillside presents different difficulties to be overcome. Heretofore most of us have tried the switchback system and we find this to be quite expensive, considering grades, fuel, wear and tear on equipment, as well as tying up too much steel. At our camps at Arlington we have about nine square miles of timber that lies on a hill, at an elevation of about 1,200 feet above our main line. To switchback this line would tie up such a large amount of steel and necessitate such long switching that it would be very expensive; whereas, if we find some means of taking the cars straight up the hill on, say, a 30 percent incline and send the loaded cars down over the same grade, it would mean a great saving.

Hoisting and Lowering Device.

At this time we are having a hoisting and lowering device built that we believe will prove a success. We expect to make it work so successfully that there will be a great many of them in use when this congress meets one year from now.

The Willamette Iron & Steel Works, of Portland, is designing an engine for us to handle five carloads of logs on a 40 percent grade. This machine is to have drum capacity for 12,000 feet of 1¼-inch line.

The balance of this device is of my own invention and consists of a heavily constructed block with three 3-foot sheaves set in triangular position. This block rests on the front end of a 32-foot car; on the rear of this car we will install a gasoline engine geared to the car axle to make it self-propelling.

At the present time we are opening up a strip of timber one mile long and a half-mile wide; the timber lying on the north, east and south of this strip is owned by other parties who hold their stumpage at a price that makes it prohibitive for us to buy. We have a road that runs along the west of this strip at 400-foot elevation, while the elevation one mile east is 1,000 feet. We are opening this timber by building a road through the entire tract regardless of grade, which varies from 6 to 18 percent with the exception of 600 feet 1½ percent. At one-quarter mile intervals we are building short spurs, switchbacked on either side of this main line, the grade on these spurs being as nearly level as possible.

In operating this device the hoist engine will be set on the left side of the main line, the cable will be passed through the block on the car and made secure to a stump for a tail hold. This gives the machine double the pulling and holding power. When the friction is released on the hoist drum the weight of the block car will take the line to the bottom of the grade except where the grade is slight, over these places the car will propel itself by starting the gasoline engine.

On the inside of curves the line will be taken care of by rollers; on the outside of curves we will use cone-shaped rollers over spool rollers. As the car goes down, the line will drop over these rollers, while on its return the height of the car will release the line automatically.

By making the block car self-propelling, we believe on short spurs we can do all the switching without the aid of a locomotive, as follows: The hoist lets off its friction, the car goes to the bottom of the incline where the empties are hooked on, the hoist then pulls them above the switch and drops them on to the spur; as soon as they reach slight grade the car pushes the empties to a siding at the donkey; the loads are then hooked onto the car, the hoist proceeds to pull them out on main line and lowers them to the bottom of the incline. In lowering the loads we intend to use a short line with eyes at 50-foot intervals and choke each load separately so they can not couple. This short line is hooked to the head of the block, thus distributing all the strain between the head of the block and the sheaves.

When we get this system installed we expect to encounter a number of difficulties that we have overlooked, but we have started in to put in a satisfactory hoisting device and we expect to do it.

A NEW TIMBER SCALE.

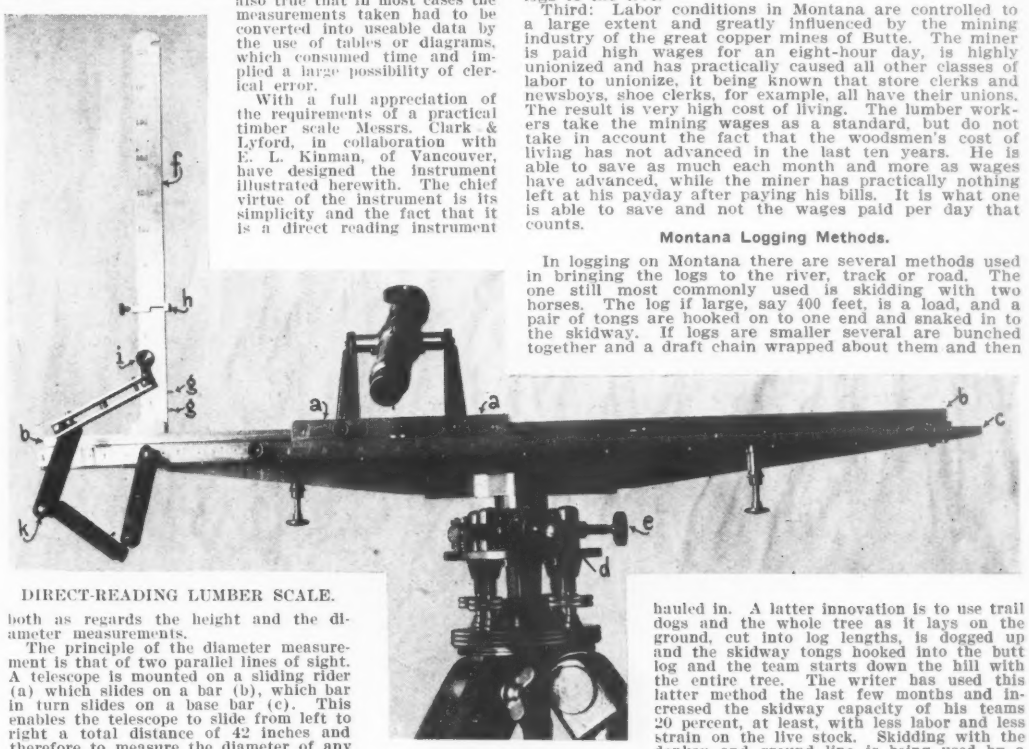
By Judson F. Clark, of Vancouver, B. C.—Details of a New Device for Cruising Timber Accurately.

Every aid to the judgment of the timber cruiser is welcomed by cruisers and owners alike, for at its best timber cruising is far from an exact science. Only one measurement can be made on standing timber under woods conditions that is at once quickly and exactly made, namely the diameter breast-high. But this measurement taken by itself is of little value, for different trees of the same kind and having the same diameter breast-high may vary 10 percent or more in their merchantable contents, according as they taper more or less rapidly in the log portion of the trunk.

The cruiser sizes up the merchantable length and its top diameter to the best of his ability by his eye, and on the accuracy of his judgment depends the value of his cruise. It has always been the custom of the best cruisers to check their ocular judgment by the measurement of whatever windfalls they find on the ground and a most excellent practice it is, where there is no better way. But the occasional windfall in the virgin forest is known not to be an accurate index to the form of its neighbors and at best is only a good deal better than nothing.

The need for an instrument that would scale the log contents of standing trees as quickly and as easily as if they were felled has led to many attempts at instrument building, but heretofore there has always been some hitch in the practical working out of the problem under woods conditions. In some cases the instrument was built to be used at a certain distance from the tree to be measured, in other cases the distance could be varied but must always be measured, or the instrument had to stand on the same level as the tree measured, all of which conditions will be readily recognized as fatal limitations for effective work. It was also true that in most cases the measurements taken had to be converted into useable data by the use of tables or diagrams, which consumed time and implied a large possibility of clerical error.

With a full appreciation of the requirements of a practical timber scale Messrs. Clark & Lyford, in collaboration with E. L. Kinman, of Vancouver, have designed the instrument illustrated herewith. The chief virtue of the instrument is its simplicity and the fact that it is a direct reading instrument both as regards the height and the diameter measurements.



DIRECT-READING LUMBER SCALE.

The principle of the diameter measurement is that of two parallel lines of sight. A telescope is mounted on a sliding rider (a) which slides on a bar (b), which bar in turn slides on a base bar (c). This enables the telescope to slide from left to right a total distance of 42 inches and therefore to measure the diameter of any tree of this size or under. Inasmuch as the breast-high diameter is measured with a tape this is a sufficient range for practical purposes.

For the purpose of measuring up a tree or group of trees the instrument is set up on the tripod and levelled by means of the levelling head shown in the illustration in the usual way.

On loosening the clamp screw (d) the bars may be revolved so as to bring the instrument in position to measure any tree in plain sight, regardless, of course, of distance from the instrument. When the telescope is brought approximately in range with the left side of any tree the clamp (d) is tightened and the fine adjustment is made with the tangent screw (e). Having brought the vertical hair in the telescope to the side of the tree to be measured, the telescope is slid to the right till the vertical hair reaches the other side of the tree, and the diameter of the tree at this point is then read direct in inches and tenths from the scale on the bars, and is, of course, exactly equal to the distance the telescope was slid along the bars.

The device for measuring the height of any point measured for diameter is equally simple and direct reading. The upright standard (f), which folds out of the way when not in use, is provided with two fixed pins (gg) and one movable pin (h). To measure a tree an assistant places a rod bearing two targets exactly 10 feet apart against the trunk. The cruiser then adjusts the eyepiece (i), which is mounted with eight universal joints (k) which enables it to be placed in any desirable position, so as to bring the two fixed pins on the standard (gg) to coincide with the centers of the targets on being viewed through the eyepiece. Having done this the movable point (h) is moved into a position so as to be in line with the eyepiece (i) and the point on the tree to which it is to be measured. This done the length of the logs to the measured point may be read from the position of the sliding pin on the standard.

By the use of this instrument a cruiser and one assistant may scale the contents of about 200 trees in a day, and all readings being direct—the log length in feet and the diameter in inches—the danger of error is practically eliminated.

The chief use of this instrument so far has been to check a cruiser's judgment as to the scaling qualities of the timber on a tract. The scaling of the exact contents of a few hundred trees on each job is the best possible basis for adapting a volume table for use on any particular type of forest. It has also been found most useful in determining the scale of timber cut in trespass where the logs have been already removed and where the tops have been misplaced either during the removal of the logs or by excessive "throw" from the stump in falling such as always occurs on slopes. In such cases the stumps are carefully measured and the scaling qualities of the trees cut are determined by scaling the taper on the standing timber immediately adjoining the area cut.

THE LOGGERS IN MONTANA.

Trials, Developments and Needs of the Loggers in Montana—By George Weisel, Missoula, Mont.

Under the subject "Trials, Developments and Needs of the Loggers in Montana" Mr. Cornwall has assigned me a very broad subject and which I hesitated in tackling until I glanced at the word trials, which can be defined as trouble. That decided me, for if there is one thing we all like to talk about, it is our troubles.

Montana, according to number of feet of lumber produced, ranks low, but as to amount of our trials takes first place and all others a poor second. There are three factors which are important in logging in Montana: First, the physical lay of the ground with its deep, narrow gulches and high, steep hills; second, the small average stand of timber per acre; third, the high cost of labor.

Under the first head, it may be noted that the gulches, being narrow, are usually rocky, covered with windfalls and thick underbrush and cut up with a swift run of water. This makes cost of railroad construction high, also for clearing up landing ground for logs which have to be skidded down the steep hillsides to this track. The hills are steep and high, it often being the case of running up a hill from 1,000 feet to 3,000 feet above the gulch. The hills are invariably rocky, often with large area of rock slides. The Kalispell district is not quite so cut up and not so steep.

Second. The average stand of timber in western Montana varies from 7,000 feet an acre for western yellow pine stands to 15,000 feet an acre in the white pine district. However, this last wood occupies a very small part of our timbered area and it might be said that our general average per acre is 8,000 feet. In the Kalispell district, larch as a wood may be said to predominate, but its average yield per acre is not much more than the yellow pine, and in many localities not as much. Average run of logs is about ten to the thousand and four to five logs to the tree.

Third: Labor conditions in Montana are controlled to a large extent and greatly influenced by the mining industry of the great copper mines of Butte. The miner is paid high wages for an eight-hour day, is highly unionized and has practically caused all other classes of labor to unionize, it being known that store clerks and newsboys, shoe clerks, for example, all have their unions. The result is very high cost of living. The lumber workers take the mining wages as a standard, but do not take in account the fact that the woodsmen's cost of living has not advanced in the last ten years. He is able to save as much each month and more as wages have advanced, while the miner has practically nothing left at his payday after paying his bills. It is what one is able to save and not the wages paid per day that counts.

Montana Logging Methods.

In logging on Montana there are several methods used in bringing the logs to the river, track or road. The one still most commonly used is skidding with two horses. The log if large, say 400 feet, is a load, and a pair of tongs are hooked on to one end and snaked in to the skidway. If logs are smaller several are bunched together and a draft chain wrapped about them and then hauled in. A latter innovation is to use trail dogs and the whole tree as it lays on the ground, cut into log lengths, is dogged up and the skidway tongs hooked into the butt log and the team starts down the hill with the entire tree. The writer has used this latter method the last few months and increased the skidway capacity of his teams 20 percent, at least, with less labor and less strain on the live stock. Skidding with the donkey and ground line is being used by a few of the companies where the hills are not so steep, but not to any large extent. As yet no satisfactory method has been applied to skid by steam on the steep hillsides where the average feet per acre is so small as is in our district.

The main trouble is that we have tried to use Coast equipment for a different class of timber and steep ground. I wish to make this point important, as we want the machinery experts and our logging engineers to devise some machine or method that will do away with teams on steep ground, where it is necessary to go from a quarter to one mile up a steep hill with a slope of 15 to 30 degrees. At present we find the chute the most efficient method for long distance side hill work, and it is being brought to quite an efficient standard. The teams yard the logs to the chute. Yet the chute depends upon the weather for its degree of efficiency and we want something that does not have to wait for the weather. The chutes are built on the ground, usually of what is termed the two-pole type, hewing the inside so as to form a trough. Some are several miles in extent and have branches or laterals leading into the main chute. The chute in our district performs the function of the roading donkey of the Coast operation. Its cost varies, of course, with the kind of country through which it is built. It will vary in cost from $200 to $500 per mile. The maintenance cost is practically negligible.

After the logs are yarded or skidded to the chute, they are rolled into the chute and either trailed to the bottom by horses or run by gravity to the landing. The method used depended upon the grade of the chute. In trailing by team is it usually necessary to grease the chute with either oil or tallow or a mixture of both, in summer weather. In winter with even a gradual slope the logs run free, by gravity. In an operation of the Anaconda Copper Mining Company as much as 300,000 feet per nine-hour day has been run over such a chute an average distance of 1½ miles. This was under very favorable circumstances, the logs having been previously decked along the chute and the weather conditions right. I do not want to be understood that the above is the general average, but it gives an idea of what can be done with a chute operation when properly handled and managed.

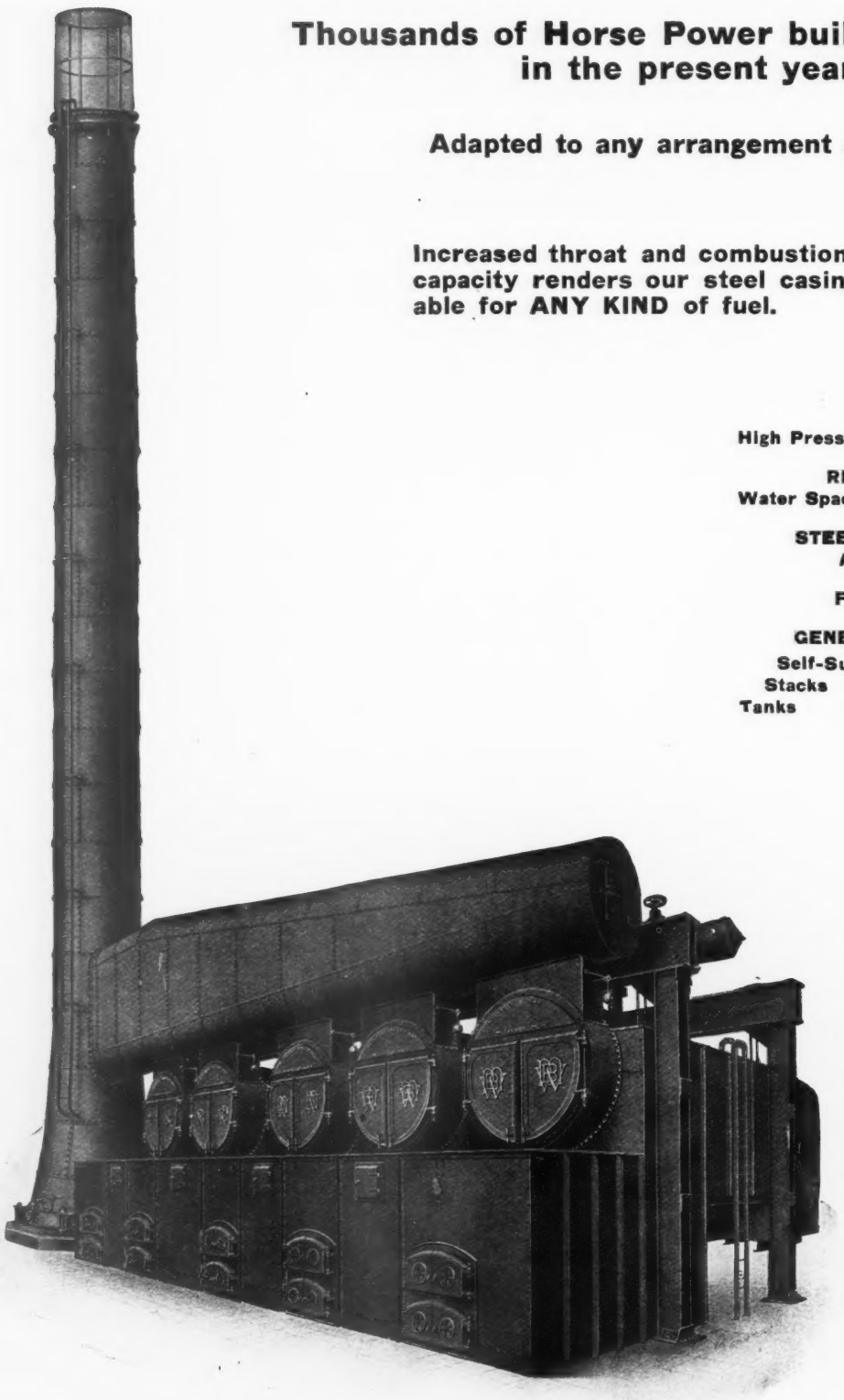
The Polleys Lumber Company also is trying out a skyline method, but as yet the company is not satisfied with results or feels that it has perfected it.

We have not done much with the fluming of logs by water.

Development of Electrical Energy.

There is a great development of electrical energy going on in Montana, and in a few years electricity will be-

THE MUSKEGON IMPROVED STEEL BOILER SETTING



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come available for all users. It may be that with this power we may be able to make more progress as the engineers perfect the electric donkey. It will not be necessary for the logger to develop his power, it being only necessary to tap the trunk lines running through his country and hitch on to his machines in the woods.

The railroad is used more and more each year for transportation of the logs from the woods to the mill, and as the convenient timber is cut from along the river bank the "drive" will soon be a thing of the past in Montana. In the railroad we are as far advanced as the best, and with the steam loaders in use we have but little trouble with logs after they are once skidded to the track. The day of the big "drives" and the "river-man," the most picturesque of our profession, is now practically past and with it go many regrets and lots of trouble.

Wages and Board.

Wages in Montana vary from $40 a month, board free, to $60, based on a nine-hour day. This last is, I believe, something different from all other districts, and our opinion is that just as much is done in the nine hours as in ten. This may be different with machine skidding. The Irish, French, Canadian and Scandinavian predominate in nationalities of crews.

Board, when men are paid by the day, is charged at $5.25 per week and I feel safe in saying we are all losing money on the cook house at present prices on provisions when men are fed as well as they are in present-day camps. Yet the place for the logger to make his profit is in the woods and not in the cook house.

The logger of Montana first of all wants to be shown how to improve the efficiency of the human part of the operation—how to get the men to take an interest in their work and their employer; that higher efficiency on his part means ability on the employer's part to pay higher wages.

Second, we need machinery especially designed to meet our special requirements and not have, for example, Coast donkeys 12 by 14 of enormous weight to haul in our small timber that must be taken from steep ground. We must have a more portable style machine, using smaller cable, that can be easily moved about and the rigging readily put in place.

Cost of Placing Logs on Cars.

At present our average cost of putting the logs on the cars is about $6 a thousand feet, including all expenses. This is divided about as follows:

Superintendent, clerk and scalers	$0.50
Railroad construction and branches	.50
Buildings	.15
Tools, repairs	.15
Roads and chutes	.50
Swamping, skidding and decking	2.50
Sawing	.75
Loading	.90
Interest	.10
Sundries	.10
Insurance	.10
Depreciation	.15
	$5.80

The above figures will vary some, but especially the item of "skidding." In some short hauls it will not run over 75 cents a thousand, but in others it may run up to $4 a thousand feet. In a level country it may not average over $1.35, but in hill logging the $2.50 figure will be close. It will be seen from these figures that skidding or "yarding," as the Coast loggers would term it, is our great problem, and we therefore submit our wants and requirements to the members and friends of the Pacific Logging Congress and ask for their assistance gained from their experience and ability, and to give us whatever suggestions and ideas they believe may be of value in our operations.

W. R. McMillan, of Victoria, B. C., read the following instructive paper on "British Columbia Forest Policies":

FORESTRY IN BRITISH COLUMBIA.

By Chief Forester W. R. McMillan, of Victoria—Fire Protection the Main Problem.

The industry which this congress represents is so much older and so much further advanced in the Northwestern States than it is in British Columbia that I fear there is but little in the present working out of the forest policies of British Columbia that may be of interest to you.

The most important general policy in British Columbia at the present day is the improvement of fire protection. The method of timber ownership in British Columbia is so different from that in the Northwestern States that it has been found necessary to adopt a different means of raising the money necessary for fire protection.

In the Northwestern States there are large areas of the most valuable timberland owned outright by private holders who, by getting together in such congresses as this and coöperation through your highly developed fire protection association, have succeeded in rendering fire protective methods almost perfect.

The expenses of this fire protection, in which the Government has no direct interest, are naturally borne in full by the owners of the timber who also initiate and carry out the work without Government assistance. In other districts you have very valuable timber in the national forests in which private owners have no interest and for which the Government acting on its own initiative has developed a system of fire protection which has been unparalleled elsewhere in the world.

Different Methods Necessary in British Columbia.

A study of the methods leading to your wellknown success in fire protection made it apparent that in striving for the same results we must adopt different methods because of what will appear to you the complicated system of timber ownership in British Columbia.

Although the whole of the Province is forested and in need of protection less than 2,000,000 acres of timberland has been patented and even in a great part of this land the government has an interest in the timber to the extent of a royalty of 50 cents a thousand to be paid when the timber is cut. There is an additional holding of 1,000,000 acres upon which the cutting rights have been leased subject to royalty and about 8,750,000 acre licenses have been granted for logging purposes, the holders of the licenses paying, as you know, revenue to the government in the form of a comparatively high annual rental and paying stumpage to the government when the timber is cut.

These crown grants, leased and licensed timberlands aggregating nearly 12,000,000 acres in area, which are held in partnership between the government and the private timber owner were all selected prior to 1908 and in the most cases were selected on unsurveyed country. They cover naturally the best logging chances in the Province so far as could be judged at that time in the absence of survey and developed transportation systems. The whole of the remainder of the Province is owned outright by the government. It must be admitted that this great area of unalienated public lands, aggregating nearly 300,000,000 acres is chiefly wooded, and so far as fire protection is concerned is largely inaccessible. Nevertheless it is estimated that even at the present time it contains fully one-third as much accessible merchantable timber as may be found in the lands held by private interests; undoubtedly as transportation facilities increase in the northern central portions of the Province a demand will arise for the timber in the thousands of square miles of spruce, pine and balsam forests which though at present considered worthless will cut about the same quantity per acre as the spruce and balsam regions of eastern Canada and the United States.

System of Cooperation Developed.

It has been impossible to dissociate the private and the government interest in fire protection as you have done. Therefore a system of coöperation has been developed whereby private owners contribute each year 1½ cents an acre for their holdings, the government contributes an equal aggregate sum and the fund so secured is used for fire protective purposes solely, first attention being paid naturally to the protection of the timber for which the government receives the revenue. This fund this year totals about $375,000.

As the settlement increases and fire danger increases and the large areas of unalienated public forest lands become more valuable and demand special fire protection it may be advisable for the government to make special allowances for this expenditure.

When a good fire season leaves a balance from the year's fire protection fund this balance becomes available for permanent improvements for fire protection, whenever the fire danger permits, the regular patrolmen and rangers are drafted from patrolmen to labor or improvements. This was done May and June of this year and again in August in the regions where no more fires were expected, practically the whole staff were transferred to permanent improvements. In this way the good patrolmen are given as long a season's employment as possible. There are now completed or under construction by the Forest Branch 1,205 miles of trail and 529 miles of telephone line, in addition to lookout points, cabins and boats for water patrol. These improvements are not confined to government lands in which private persons are interested. They are practically all constructed through private timber holdings, the private owners in many instances coöperating in their cost.

You have observed by this time that our practices in raising and spending money for fire protection are based on your experiences during the last few years. Similarly our methods of controlling fire hazards are very similar to yours. I shall therefore acknowledge that in preventing fires we are endeavoring to do as you have done and shall only refer briefly to the railroad and slash hazards.

Safeguarding Methods.

Under the existing legislation railroad construction and operation are closely safeguarded over in the most remote forest regions of the Province. And this safeguarding is done at the expense of the railroads themselves. Under

W. R. McMILLAN, OF VICTORIA, B. C.; Chief Forester of British Columbia.

Dominion or provincial legislation which covers all railroads the Forest Branch puts on such patrol as may be necessary along railroad construction, supervises the patrol and charges the total expense to the railroad company. Contractors are required to secure permits before lighting fires, and to burn all slash resulting from road-making, camp-building or right-of-way clearing. This has been found necessary as the class of labor employed by railway contractors is certain to start fires in slashing. Each year the Forest Branch examines all operating railway lines and specifies where right-of-way clearing is necessary, the sections over which speeder or foot patrol is necessary. The railway companies are required by law to carry out these recommendations. The patrolmen register at the stations, the patrol is supervised by Forest Branch inspectors and is kept constant throughout the danger season. The locomotives are inspected monthly and oftener by Forest Branch officials and if unsatisfactory are ordered from use until repaired. Every mile of Canadian and United States railway in British Columbia is operating under these regulations; the Forest Branch supervises as carefully the patrol through privately-owned timber as through government timber. The actual coöperation of the railroad officials after the regulations were once enforced has made the supervision a pleasure.

We have no compulsory slash disposal law in British Columbia. Until recently there has been a prejudice against slash burning. Fortunately this is dying away. Loggers see that in nearly all districts slash burning is their only protection. Special efforts are being made now by the Forest Branch through correspondence and interviews each fall and spring to have the slash of the preceding year burned. This policy is succeeding. Over 20,000 acres were burned this spring and it is hoped to exceed that this fall. About 75,000 acres are cut over a year.

LOGGING SCENE IN AUSTRALIA.

Timber Selling Policy.

While protecting the forest from fire the government is not endeavoring to lock it up against use. All timber or vacant crown lands is open for purchase by loggers. The terms are easy, being as a rule payment of 10 percent of the total estimated value in cash, the payment of low annual rental and the payment of the balance as the timber is cut. The conditions attached to the contract are that the timber be not held for speculation but be logged within a period of years, so fixed as to be reasonable for the bonafide logger; that good judgment be used in removing all merchantable timber, leaving none in high stumps, long tops or wasted trees and logs and that the brush be disposed of according to the contract.

This policy of selling timber, which corresponds closely with that in practice in your national forests, being framed to assist the actual logger, secure full value for the timber and insure fire protection, is meeting with success. During the last year sixty sales have been completed or arranged involving 300,000,000 feet worth about $400,000 and sixty-five applications have been received for 100,000,000 feet additional.

As the government is a part owner of the timber it is interested in how logging is carried on. For this reason logging operations are regularly inspected. It is purposed that hereafter all logging operations in the Province will be inspected not less often than once in three months. The object of this inspection is to prevent trespass on adjoining Crown lands, to ascertain that the timber is being logged as closely as market conditions allow, to improve fire protection and to insure that the government secures proper royalty for all timber cut.

Policy Toward Settlers.

The policy with regard to settlement on timbered lands differs in British Columbia from that in the United States. Settlement is naturally not allowed on leased or licensed timberlands though it is provided that the department may cancel and offer for settlement leases and licenses which do not carry merchantable timber. Public lands are only offered for settlement where the timber averages less than 8,000 feet an acre west of the Cascades and 5,000 feet an acre east of the Cascades. It is the duty of the Forest Branch to examine areas applied for by settlers in timbered districts to prevent the alienation of timberland. This policy is a protection to the government revenue as it provides against the alienation of valuable timber; it is a protection to the timber owner as it relieves him of the fire danger which follows settlement in timber districts and it is a protection to the bonafide settler who would often, in ignorance of local conditions, locate in heavy timber where he could not make a living farming.

This logging congress is developing the profession of logging engineering. That profession will, as the loggers present from our Province will tell you, find there many opportunities for its development. It is a country of high logging costs and it is where you have rough ground, steep slopes and long hauls that the logging engineer will make possible your profit. Therefore education in this applied science is of greatest interest to the government as to the largest timber holder in British Columbia. The question of education in forestry and allied subjects at the new university of Vancouver has been taken up by the Minister of Lands and I do not doubt that before the next congress some definite announcement will have been made.

A VISITOR FROM THE ANTIPODES.

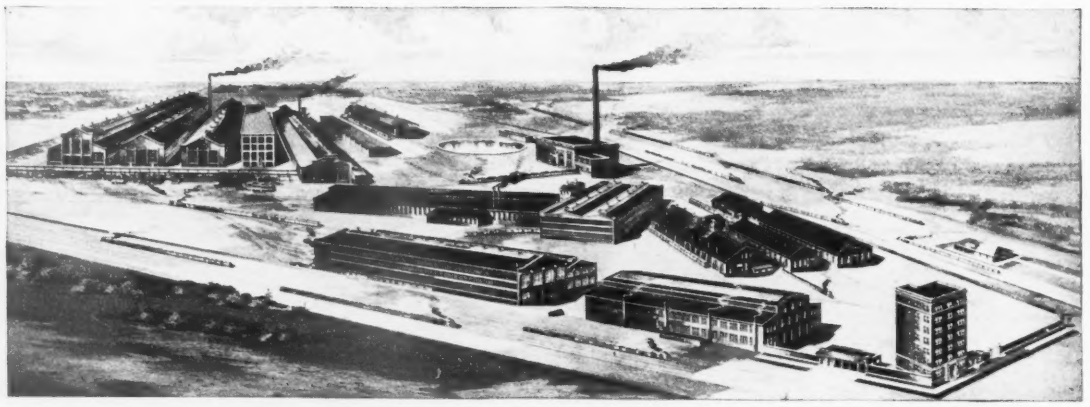
T. G. Lahey, of Messrs. Lahey (Ltd.), Brisbane, Queensland, is making a tour of the United States, familiarizing himself with the way the lumbermen of this country operate and also visiting the different machinery plants of the country, with a view of bringing his own plant up to the minute in point of equipment.

Mr. Lahey said he was astonished in the manner in which the west coast manufacturer turns out lumber and also deplored what he called wanton waste of raw material. He said that after his concern was through cutting very little was left to be burned up. He brought along several pictures of his operations, two of which are herewith reproduced. He not only uses American sawmill machinery but he also uses American locomotives in his logging. They have some steep grades, running from 8 to 10 percent in some cases. They have 13 miles of logging road and have experimented with electricity in the use of getting logs to the railroad track, but find that they have better success and can do it much cheaper by using oxen.

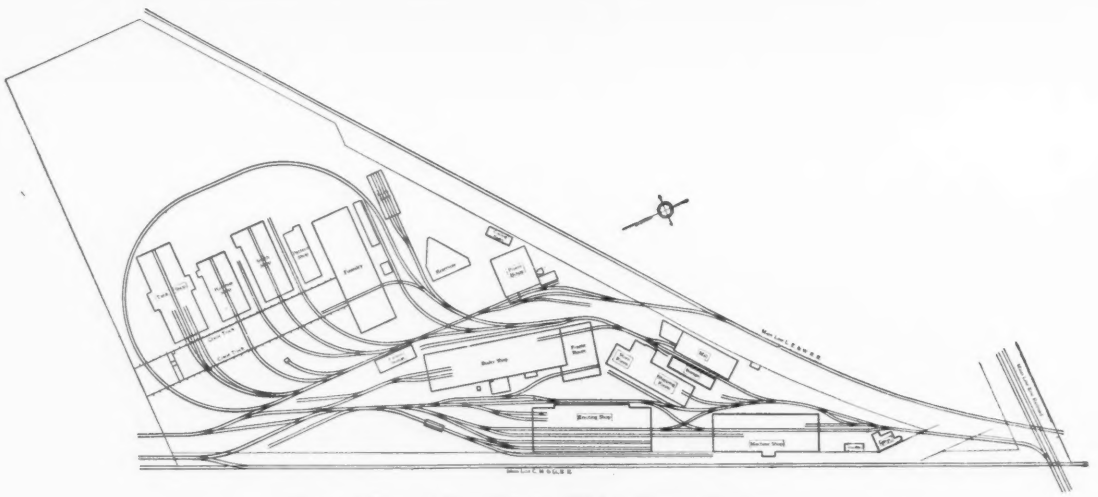
Lahey (Ltd.) cut about 13,000,000 feet a year, 10,000,000 of which is pine, known as hoop and bunya, the balance of the cut in hardwoods. Mr. Lahey said that the hoop pine compares very favorably to Douglas fir in strength and grows to about six feet in diameter. Bunya is also an extremely strong timber, but its growth is confined to a rather small circumscribed area. The concern sells some of its upper grades but utilizes most of the product itself in making boxes and for other purposes.

Mr. Lahey was accompanied by his wife, who seemed to be thoroughly conversant with the manufacturing end of business. From Chicago they will go to New York, and after spending some time in the East will work their way back to San Francisco by the southern route. Mrs. Lahey said she was exceedingly anxious to get home, as she had six children in Brisbane, who she wanted to see and who she knew would be glad to see her again.

New Home of the "SHAY" Locomotive



Actual View of New Plant of Lima Locomotive Corporation, Lima, Ohio.



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SOUTHERN LOGGERS IN ANNUAL.

Logging Superintendents of Leading Southern Mills Frankly Discuss Woods Operating Problems—Lowering Logging Costs, Use of Steam Skidders, Fuel for Locomotives, and Other Practical Subjects Handled.

NEW ORLEANS, LA., Sept. 29.—What promises to be the most largely attended and in every way the most successful meeting of the Southern Logging Association ever held was opened in the Grunewald Hotel today when the third annual convention of that organization was called to order at 10 a. m. by President J. B. Baker, of Hodge, La.

The convention was opened with prayer by Rev. H. R. Singleton, of the Parker Memorial M. E. South, New Orleans.

President's Address

Following the invocation President Baker spoke as follows in part:

Today we have a new way of logging that has been creeping, surely and silently, into our logging camps. A company is neither more prosperous nor more progressive than are its logging camps, and when the logging man is progressing, you may rest assured that his company is being financially benefited.

Today our best logging men are men who have come up from the ranks, and the natural training they have received makes them do things, go without things and, above all, think for and wait on themselves. The superintendent has been raised on hardships, which have always put him on his mettle, and yet, as he worked, he was so rewarded that he never became depressed or cast down.

The average logging superintendent is a peculiar type of a strong man. In most instances, I find him to be a man who is earnest, kind, generous, intelligent and effective; he is a man who has snatched success from the face of failure; a man who has been tried and is willing to be tried again.

You men who are here today represent one of the most expensive departments of the lumber industry; you are here from far and near, and I hope you are wideawake and will bring to command your most progressive ideas for discussion. I know that all of you have been daily struggling with the intricate problems of logging and, no doubt, feel that you should be silent, but this association was organized for your benefit, and it will only help you as you help each other.

You will each admit that logging is a very attractive business, because of the fact that you are always more or less thrown upon your own resources on account of being located a great distance from your superiors. This being a fact, it is necessary for you to take considerable time to think and plan your work, and always to embrace in these plans much faith and reliance on those men who have to do the actual labor. Work without faith does not bring good results, and laborers not trusted and confided in will not get you the best returns. * * *

I wish to call your special attention to the talk of N. C. Schlichter on Y. M. C. A. work. There is nothing you can do that will bring you greater reward than the upbuilding of the men that are working for you. They all have a life to live, the same as you, and, in many instances their hardships and privations are many. Many of them do not know what it is to have a friend; many of them forget their Supreme Friend, and their only chance for a happy home hereafter may be in your care. So guard well their welfare and try to throw in their way as many deeds of kindness and words of cheer as you can.

There is a growing tendency for labor and capital to be antagonistic, and this is brought about because we so often treat our men as so many cattle. The highest ideal of this life and the greatest honor that can be bestowed on man is to have the confidence, esteem and friendship of his fellow man. To attain this honor, try to remember the welfare of your men at all times and, where possible, lighten the burden of him and those depending on him for a livelihood, for in doing this your reward will not only be great in dollars and cents, but you will receive credits on the book in that Great Beyond, where one abides, who said "Inasmuch as you did it unto the least of these, you did it unto me." * * *

May the future business and life of each and all of you be so prosperous, happy and bright that in your darkest hour you can smile and say—

"There is no Chance, No Destiny, No Fate,
Can Circumvent or hinder or control,
The firm resolve of a determined soul."

The president's address was listened to with the greatest attention and at its close the speaker was warmly applauded.

Secretary-Treasurer's Report.

At this stage Secretary-Treasurer Boyd, of New Orleans, submitted his annual report, showing that notwithstanding a larger expenditure during 1913 than during any previous year the association has the largest cash balance on hand in its history. The report follows:

During the year district meetings of the association were held at Beaumont, Pensacola, Mobile and Hattiesburg, at each of which new members were received. While the attendance was not as large as it should have been, those who did attend received much benefit.

This is the fourth meeting the association has held. Those of you who were here at the organization in 1910 will notice a great improvement in this meeting as compared with that one. Then we did not know just what we wanted; our discussion of topics was informal. At this session, however, we have a number of able addresses to consider, as well as an opportunity to discuss problems that are causing worry.

One of the most valuable features of this meeting will be the consideration of the answers to questions prepared by President Baker that have been circulated among lumber companies.

The growth in membership has been large, showing that lumber companies are beginning to realize that this organization is an important part of their equipment.

In conclusion, your secretary can not refrain from expressing his gratitude to those who have written him telling what value the association has been to them.

Treasurer's Report.

I herewith submit my report as treasurer for the year beginning September 20, 1912, and ending September 27, 1913:

RECEIPTS.

From dues	$407.00
Balance on hand September 20, 1912	53.51
	$460.51

DISBURSEMENTS.

Exchange on checks		$ 2.80
Printing:		
Programs, questions for meetings	$28.50	
Pamphlet reports of proceedings	71.07	
Letterheads and miscellaneous	15.00	
		114.57
Postage:		
Mailing pamphlets	$28.00	
Stamped envelopes	67.50	
Postal cards	3.00	
On letter heads mailed to officers	1.06	
		99.56
Telegrams and miscellaneous		8.30
Stenographer		73.00
		298.23
Balance on hand September 27, 1913		$162.28

Second Cut of Yellow Pine.

The next on the program was the reading by Secretary Boyd of a paper prepared by Herman H. Chapman, professor of Forest Management of Yale Forest School, on "Possibilities of a Second Cut of Southern Pine." The paper follows in part:

Since 1907 the Yale Forest School has conducted the field work and instruction of the senior class in the spring term in coöperation with lumber companies located in the Southern States.

In no case has there been a formal contract between the company and the school, but under verbal agreement the company has allowed the students the freedom of its mills and lands for purposes of instruction, built temporary wooden shacks for quarters in camp, instructed its employees to give such information as will be of assistance in instruction in logging and milling, and furnished commissary supplies at reasonable prices. The students maintain their own commissary in camp and pay all their own expenses.

J. B. BAKER, HODGE, LA.;
Reëlected President Southern Logging Association.

The work is conducted primarily with the object of instruction, but a large amount of information is collected and given to the company. This consists of a topographic map, an estimate and description of timber and young growth, data on the growth of the timber, suggestions for management of the tract for the production of wood, and studies of present utilization and waste in logging.

The present policy of most holders of stumpage in the South is clear cutting, which is followed by accidental or intentional broadcast burning of the slash, and sale of the land to settlers or land companies; and this is attempted in spite of the fact that there is at present no urgent demand for much of this pine land and that those timber companies still have ten to thirty years' cut in sight.

A few farsighted firms have attempted in places to limit the present cut to a certain diameter, reserving the small trees for a future crop. This is a move in the right direction, yet analysis shows that adherence to such a rigid diameter limit does not leave the most vigorous trees.

The author dealt at length with the composition of the forests, damage to timber, age classes, reproduction and growth of pine, and gave tables showing the average growth in diameter, breast high outside bark, of shortleaf and loblolly pine, using 200 trees as a basis, covering a period of 100 years at ten-year intervals and also the average yield per acre of even-aged stands of shortleaf pine under ordinary conditions on large areas in Ashley County, Arkansas. The latter was computed by the Doyle rule.

He also took up the management of the tract, agricultural possibilities and told of securing a second cut of pine. He explained at length the condition of cut-over lands and told of a proposed plan for securing a better cut as well as the results of experimental marking for a second cut.

He pointed out the necessity of marking trees to be cut, and declared that if cutting is done on a basis of rigid diameter limit, at least one-half of the trees left will make poor growth. The growth of virgin stands of pine, he said, is determined by the age and condition of the timber, and stands from which the old, over-matured trees have been removed present a condition quite different from that existing on the average "forty" of virgin timber.

He then took up the increase in value of second cut and also told of brush disposal. Of the financial aspects he said:

Since the leaving of a portion of the stand which would otherwise be cut takes the form of an investment, the probable returns should be calculated. Assuming that 2,630 feet board measure per acre left standing will increase in ten years to 4,466 feet board measure, this computation is easily made.

With land valued at $5 an acre and stumpage at $5 a thousand, this investment should, after paying all expenses, yield 5 percent compound interest at the end of ten years. Assuming an initial cost of marking of 10 cents an acre, and allowing 5 cents a 1,000 feet, board measure, for lopping and burning the tops, an average stand of 8,000 feet board measure gives an expense of 50 cents an acre. Tops can be piled and burned for from 25 to 50 cents a thousand feet, board measure, and without piling, the expense is greatly reduced. The following is a summary of the initial investment:

2,630 feet b. m. @ $5	$13.15
Land	5.00
Marking and brush disposal	.50
Total initial investment per acre	$18.65

Assuming there is a tax of 1 percent on this valuation gives 18 cents a year. Fire protection if undertaken should not cost over 2 cents an acre, making a total of 20 cents a year for taxes and protection. Capitalizing at 5 percent, this would mean an investment of $4 an acre. This makes a total investment of $22.65, which at 5 percent compound interest amounts to $36.89 in ten years. At that time if the land is still valued at $5 and the $4 capital used to supply the 20 cents annual charge is credited, the net cost of the timber in ten years at 5 percent compound interest is $27.89.

At this time the stand will contain 4,466 feet, board measure, to the acre. If it is worth $27.89, it has paid 5 percent, which is equivalent to a stumpage value of $6.25 a thousand. It is fair to assume that this increase in price will occur in the ten-year period.

If the lands cut over are not left in a productive condition, they will lie idle until sold. No interest on the investment will be earned during this time, but taxes will continue and the total loss should be gauged by the compound interest on the money invested in nonproductive lands. The price of land may rise, in which case the increased value will tend to offset this loss of interest. This would occur whether or not the land were cut over.

If the lands are not cut over, the original uneven-aged growth will probably increase in value, but at half or less than half the rate percent on the investment that it would if culled of dead or unproductive capital. In either of the above cases, these lands as a whole, with growth balancing decay, are carried by the company at much greater relative cost than if put into condition for growth.

Once the land is cut over properly, the investment in this second cut will carry itself independent of all other portions of the operation, and the investment left in the woods or spent for protection or taxes will, as a rule, be returned with 5 percent compound interest when the final cutting is made.

Cutting should, therefore, be confined as much as possible to stands which are suitable for a second crop, since the sooner these are cut over the greater will be the amount of growth secured before the close of the whole operation. An exception to this rule is timber which is very old and decadent, which should be cut as soon as possible. But unless there is rapid deterioration, it will pay to hold mature timber for better prices.

In conclusion he declared the measures necessary to secure a second cut are recommended as being inexpensive and practical. The measures necessary to secure reproduction and protection of seedlings would involve a slightly increased expense and would promise no immediate financial return, but would preserve productiveness of the soil, by insuring a timber crop on land not farmed and might prove ultimately of great financial value to the land owners when they sell these lands. These measures, he said, can be urged only as a matter of far-reaching public policy.

Close Utilization of Timber.

Secretary Boyd explained regarding the following paper prepared by Prof. Ralph C. Bryant, of Yale Forest School, that it was a treatment of data collected in a study of logging methods on the operations of the Crossett Lumber Company, Crossett, Ark. The original treatment of these data was presented to the Southern Logging Association at its annual convention last year. The present paper, however, deals with the data from a somewhat different viewpoint and in a very practical manner. The former paper was of a critical nature, whereas the present is more directly suggestive of methods of improvement in practice.

Mr. Bryant decried the lack of close utilization of yellow pine timber so apparent on many operations in the South. He said it had been the practice of yellow

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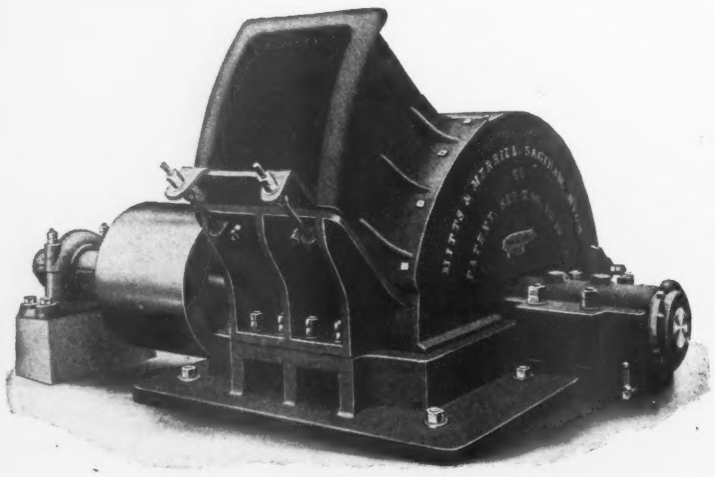

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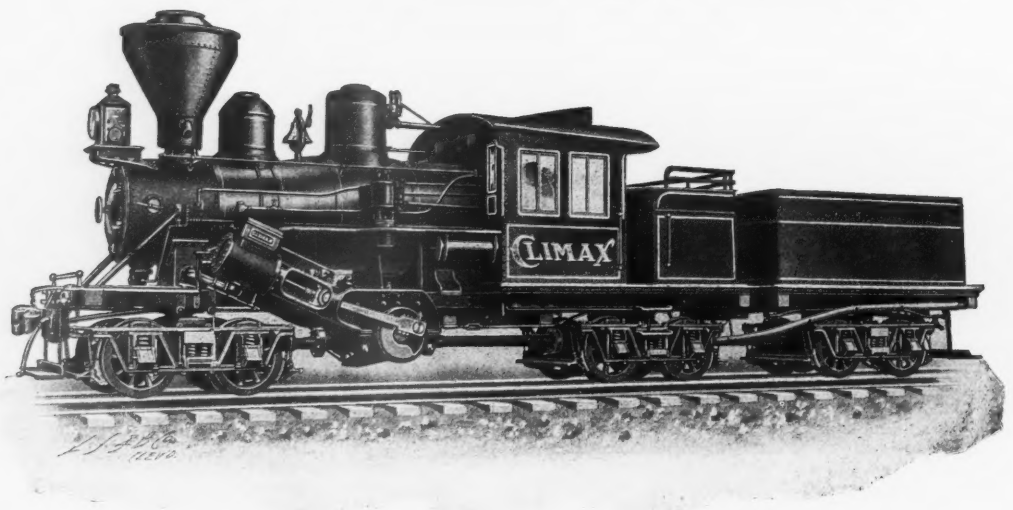

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pine operators in the past to cut high stumps and that the loss of merchantable material from this source in many cases has totaled several percent of the stand. Commenting upon this he said:

There are several points to be considered in determining the proper height at which stumps should be cut. Among these are: (a) size of the timber; (b) soundness of the butt; (c) amount of pitch in the butt; and (d) labor conditions in the region.

In the case of sound trees stump heights should not be greater than the diameter of the trees at the cutting point, with a maximum height of 24 to 26 inches, even for the largest trees. That the latter heights are thoroughly practical for large trees is evidenced by the fact that careful operators use them.

Where butts are defective or pitchy there may not be any gain from cutting low stumps since the added material secured might be thrown away at the mill; however, the faller's judgment should not be taken in such cases without being checked by a saw boss.

A difficulty is sometimes experienced by operators in securing low stumps when labor is scarce, because the lower the cut the more fatiguing the work, and unless all operators in a given section have the same standards, the workmen will seek employment with those who are most lax in their methods.

It may not always be possible to secure as much extra material by cutting low stumps and saving these sections as is shown in the tables I gave, because of the possibility of having to leave a short section in the top of the tree which is not of sufficient length to make an added 2 feet on the top log; nevertheless, the material saved in the butt log will be of greater value from the standpoint of both quality and quantity, because of the larger diameter and the freedom from knots.

He outlined the loss from breakage and felling, and called especial attention to the cutting of crooked and forked trees. He illustrated the proper and improper cutting of forked trees. He explained fully the trimming length of logs, the selection of log lengths, and waste in the tops of trees. He told of a method of cutting rough tops and gave a table showing measurements on cut-over lands in Arkansas, illustrating the lack of close utilization.

He suggested that the successful solution of the utilization problem can be brought about only by thorough inspection of felling and log making. Where ten or more saw crews are employed, the proper supervision of this work will require the services of a saw boss, who should be responsible to the team boss, in order that close coöperation may exist between felling and skidding crews. He outlined the duties of the saw boss as follows:

(1) The distribution and care of all tools issued to fallers and logmakers. Economy is effected by a system of accounting for tools and other equipment. Special attention should be given to checking up the length of measuring sticks each day.

(2) Culling all trees and logs that are not worth handling.

(3) The instruction of the workmen in marking off log lengths on felled trees in order to enable them to secure the maximum quality and quantity of timber.

(4) The thorough inspection of the work of the felling and logmaking crews to point out mistakes for the purpose of avoiding them in the future.

(5) The scaling of all timber that is felled.

Difficulties will be experienced at the start, but instruction by a saw boss for three or four weeks will result in a marked improvement in the work. Careful supervision, however, will be required constantly, for it is easy for workmen to fall back into old habits.

The saw boss should, after a few weeks, have sufficient time to scale the timber at the stump, since his inspection duties will require him to visit every felled tree. The wages of a scaler can thereby be saved.

The salary of a competent saw boss should be at least $100 a month, because a man without proper conception of the work would be of little value.

The successful inauguration of a scheme of this sort should involve some reward for the laborer who does his work well, inasmuch as he is called upon to exercise greater care and intelligence, and the additional profits accruing to the lumber company should, in part, be shared with him. This reward might assume the form of a bonus of a few cents per thousand feet of timber cut, or a slight increase in the daily wage.

When Secretary Boyd had finished reading Mr. Bryant's paper President Baker led a discussion by suggesting that most of the companies are losing money every day cutting crooked logs. He said that mill people always thought that crooked logs meant that the logging crews were getting behind.

Thomas Laffin, of the Mississippi Lumber Company, Quitman, Miss., advocated the use of an iron stick for measuring logs in the woods, as it could not be cut off short-measured logs would be avoided.

F. M. O'Brien, of the Cotton Bros. Cypress Company, Morgan City, La., said he had used successfully a wood stick with an iron extension.

R. T. Gallagher, of the Sumter Lumber Company, Electric Mills, Miss., said he had used a wood stick with a 10 penny nail driven in each end. This prevented the cutting of the stick and the resulting short logs.

The session then adjourned.

MONDAY AFTERNOON.

The afternoon session was opened at 2 o'clock with an address on "Organizing New Logging Camps," by R. Lee Bass, of the Louisiana Sawmill Company, of Glenmora, La. In briefly introducing his subject Mr. Bass said his operation is new and the mill is not yet ready for logs. Continuing, he said:

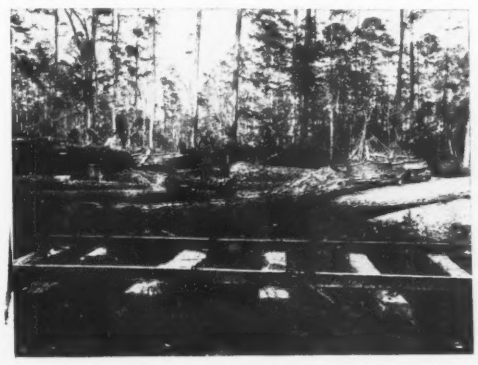
In organizing logging camps there are many things to take in consideration, such as the life and size of the plant, the kind of timber and the territory to be logged, as well as the kind of equipment to best suit your needs. The questions of how and where to build your camp houses, whether they are to be on wheels or not, are also important.

I want to lay out my camp so each race will have quarters to itself and if I have a camp commissary I try to place it so each person can go to it or the doctor's office or my office without going near or molesting others. In organizing camps I locate on some of the main lines, then build a temporary line to the right and place the whites on or near it and then build a temporary line on the left of the main and put the colored on it. So the commissary and these offices are near the main line and between the two quarters and I always try to have the school houses convenient for each side, and of course these are used for churches.

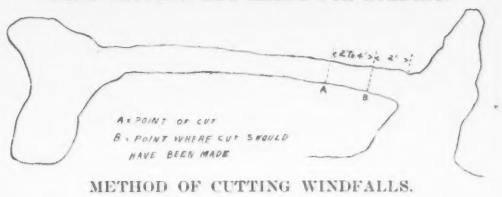
I have found it a good plan to make each race stay on its own side of the camps unless it had some important business on the other side. When you place your houses or cars as you want them, I have found it a good plan to group the different families for the different departments as near as practical.

I think it best to build all of your houses or cars alike as near as possible and make everything as convenient as practical. Once when I first began logging I was building a camp and was building all of the camp cars alike in every respect and a very small family would only use one car of two rooms and larger families would use two of these cars, which would give them four rooms. Well, a family moved into one of these double cars and the stove flue was not at the place to suit them, so I changed it and it was not long before they soon decided on another change, and when we got ready to move camps they wanted one of the rooms changed to the other end of the other car, of course causing a few more changes of the flues, and after that I learned that I could change the occupants easier than I could the flues and the location of the cars.

In organizing camps some of us make them too large for the operations and have more men than are necessary to do the work, and if you have more men around than are needed you will work a lot of them when you should not and therefore increase your costs. While on the other hand there are camps that are too small for the operations. I am very sorry to say that sometimes camp houses or cars are incon-



VERY CROOKED LOG READY FOR LOADING.



METHOD OF CUTTING WINDFALLS.

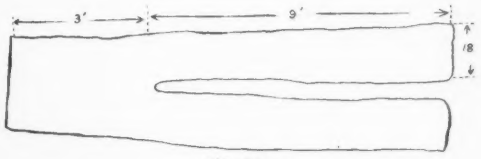
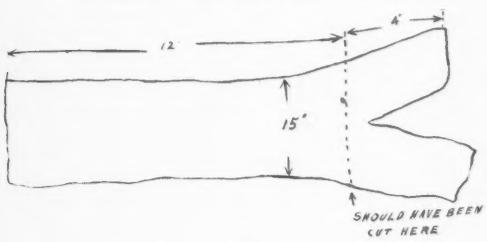
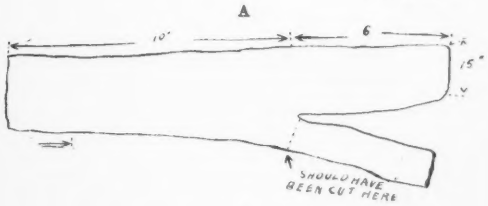


FIGURE II

FORKED TREE IMPROPERLY CUT.

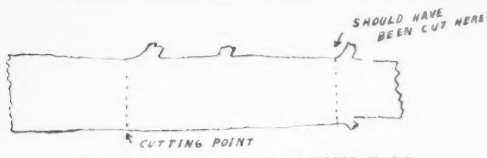


A



B

FORKED TREES IMPROPERLY PREPARED.



METHOD OF CUTTING ROUGH TOPS.

TOP BROKEN FROM FALLING ON A STUMP.

WASTE IN THE TOP OF A TREE.

SECTION BELOW THE TOP SHOWN ABOVE.

UNNECESSARY WASTE IN LOG MAKING.

VERY WASTEFUL CUTTING OF A FORKED TREE.

WASTE IN A TOP.

ILLUSTRATING THE ARGUMENTS OF PROF. RALPH C. BRYANT ADVOCATING AVOIDING WASTE IN CUTTING.

AXES and Lumbermen's Tools

Hand Forged Crucible Steel Chopping Axes in all patterns and finishes, including the famous

Sager Patent Chemical Process Axe

Daily Capacity of Factory { 1400 Logging Tools / 1500 Axes

Our Labor Saving Logging Tools Are Unequalled.

WE MANUFACTURE:

Chopping Axes	Log Grabs or Dogs	Carting Grabs
Firemen's Axes	Forged Swivels	Grab Mauls
Ice Axes	Bark Spuds	Grab Skippers
Peavies	Crosscut Saw Handles	Trailers
Cant Hooks	Saw Wedges	Cold Shuts
Timber Carriers	4-Paw Grabs	Skidding Tongs
Mill Hooks	Crotch Grabs	Swamp Hooks.

HUNTINGTON PATTERN EMERY WHEEL DRESSERS AND CUTTERS, ETC.

The Warren Axe & Tool Co., Warren, Pa. U.S.A.

THE MICHIGAN

LOGGING WHEELS

The Standard For 25 Years.

The Wheels That Have Made Michigan Loggers Famous.

They are also helping others
Read this letter—

WEED LUMBER COMPANY,
Manufacturers of California White Pine.

Weed, Calif., June 21, 1907.

To Lumbermen generally:—

Beg to say we have in use 36 pairs of the Michigan Logging Wheels manufactured by S. C. Overpack, Manistee, Mich. We find the use of them is very satisfactory, and the cheapest way we have been able to do our logging. Our mill cut is about 300,000 feet per day, and we have not a single donkey engine in use. Very respectfully,

WEED LUMBER COMPANY, Per C. E. Evans, Supt.

Handled with One Team.
Unloaded in Half a Minute.

Loaded in 3 Minutes.
1200 to 3000 Ft. at a Load.

THEY ARE MONEY SAVERS, AND GET **RESULTS.**

Let Us Tell You More About Them.

S. C. OVERPACK, Manistee, Mich.

veniently arranged and have no water and poor accommodations for the laborers, and very often a worthless class of labor is secured and therefore your organization is not satisfactory.

In organizing camps they should be laid out so that they will get good drainage and should be kept clean and in good sanitary condition.

Good camp cars, good schools, boarding houses with good beds and delicious "chuck," insure one of a good camp organization. But this is not all. We should stop and think of other people and not do too much starching and ironing and forget the man that furnished the money for the investment and have him wondering where he is to come in for his part of these good things.

A brief discussion of labor and camp conditions then was indulged in. Among the speakers was B. P. Head, of the Kaul Lumber Company, Tuscaloosa, Ala., who said his company got as many families as it could, keeping about 250 portable houses. The company carries a church and a school with each camp, and keeps the camp in the most sanitary condition possible. About 60 pupils are in the school at present.

Cost of Boarding Men.

Owing to the illness of C. C. Curry, of the Vredenburgh Sawmill Company, Vredenburgh, Ala., the subject of "Camp Boarding House, or How to Feed Men" was handled by means of general discussion.

J. B. Work, of Lumber City, Ga., of the Ocmulgee River Lumber Company, said his company did not wish to make any money on boarding its men, merely wanting to "break even."

V. C. Langley, of Laurel, Miss., of the Wausau-Southern Lumber Company, said his company aimed primarily to keep the men satisfied by feeding them well. The boarding house had, however, paid a small profit after boarding the men for $3.50 a week.

R. T. Gallagher, of Sumter Lumber Company, Electric Mills, Miss., said his company had been losing money on its boarding house. Since the first of September the company has been contracting its boarding, but the contractor is making almost nothing.

T. B. McCormick, of Sardis, Miss., of the Carrier Lumber & Manufacturing Company, said his company just about broke even on the boarding house.

L. G. Smith, of Evadale, Tex., with the Kirby Lumber Company, emphasized the importance of proper food.

W. W. Wolfe, Chicora, Miss., with the J. J. White Lumber Company, said his boarding house was not making any money, but was feeding its men "all they could stand up to."

J. F. Woods, of Call, Tex., with the Kirby Lumber Company, said the boarding house at his camp did not make any money at $3.50 a week.

Detailed Cost Systems.

The discussion of the boarding house question brought out a wide divergence of opinion and of methods of accounting. Some of these differences were made the basis of an introductory address by D. C. Harris, of Louisville, Ky., on the subject of detailed cost systems. Mr. Harris is with C. C. Mengel & Bros. Box Company, operating in mahogany in Mexico.

The speaker said his company's system makes provision for 120 subdivisions and enabled the foremen in the woods to speed up any branch of the logging operation.

J. T. Mahoney said that Eastman, Gardiner & Co., during the last eleven years have subdivided 15 individual accounts kept in the office into 60 divisions for the use of the woods operator.

Bonus System or Task Work.

The next number on the program was a paper on "Bonus System or Task Work," prepared by S. Rigell, of Greenville, Fla., with the J. S. Betts Company. As Mr. Rigell was unable to be present his paper was read by Secretary Boyd.

For any system of task or bonus work to be successful there must be an incentive equal in proportion to employer and employee, declared Mr. Rigell. This, he said, has been the rock on which a great many have wrecked all hopes of success in an effort to get men interested in task or bonus work. In the eagerness to win, employers lose sight of the fact that the laborer must have an incentive equal to his own, otherwise there can be no lasting results. Mr. Rigell declared that since the beginning of time all important undertakings, whether good or bad, have been spurred onward by strong personal incentives in the breast of some human being. In his opinion this cardinal fact must be considered in the successful handling of men.

From personal experiences Mr. Rigell said he had found men more or less of a failure by reason of the fact that the incentive offered had no lasting, tangible value. He told of his first experience in task work as a boy, when told by his father that he might go fishing as soon as he completed plowing the peach orchard. While the task looked large, the dogwood trees were in full bloom, spring was in the air, and he knew the fish would be biting fine. He did not stop for the noon hour, but completed his task about one o'clock, and as a specimen of inefficient work he declared it never had an equal. He said that while digging bait his father inspected the work and on his return from the peach orchard brought some "peach tree sprouts" with him, which he used very effectively, and as a further penalty made him grub roots in the potato patch all the afternoon. This system, he said, was typical of that which he and other logging men have used and from personal observations he had found that all schemes of this type are ineffective. He told those present he had not a doubt but that each had some pet scheme of cajoling his men to extraordinary effort, but warned them that unless their incentive had material, tangible value, they could have no continued success.

Except individually or sporadically, he said, the incentive of love, hate, fear, ambition, pleasure or cupidity alike will fail. The man's knowledge that he has honorably earned all that which will supply the necessities of life; that his employer recognizing his worth has supplied him with the means, the speaker said, is the only incentive strong enough to make employees put forth continuous and efficient effort. He pointed out that the great object of all logging men has been to reduce the cost of production and with these facts before him and also the germ of an idea in mind which those "peach tree sprouts" implanted, he said that with the valuable aid of one of his former employees he worked out a bonus system which has been placed in successful operation and in his opinion has the right incentive. It follows:

Schedule 1.

SCHEDULE OF PAY FOR PROPOSED BONUS SYSTEM.

Number of logs....	50	51 to 60	61 to 70	71 to 80	81 to 90	91 to 100	101 to 110	111 to 120	121 to 130	131 to 140	141 to 150
Daily wage now in use—						Base.					
Leverman	$2.00	$1.50	$1.60	$1.70	$1.80	$1.90	$2.00	$2.10	$2.20	$2.30	$2.40	$2.50
Flagman	1.50	1.13	1.20	1.28	1.35	1.43	1.50	1.57	1.65	1.72	1.80	1.87
Dogger	2.00	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50
Rider	1.25	.94	1.00	1.06	1.13	1.19	1.25	1.31	1.37	1.44	1.50	1.56
Total for one line	$6.75	$5.07	$5.40	$5.74	$6.08	$6.42	$6.75	$7.08	$7.42	$7.76	$8.10	$8.43
Total for four lines	$27.00	$20.28	$21.60	$22.96	$24.32	$25.68	$27.00	$28.32	$29.68	$31.04	$32.40	$33.72

Schedule 2.

SCHEDULE OF PAY FOR PROPOSED BONUS SYSTEM.

Number of logs....	200	201 to 240	241 to 280	281 to 320	321 to 360	361 to 400	401 to 440	441 to 480	481 to 520	521 to 560	561 to 600
Daily wage now in use—						Base.					
Foreman	$4.00	$3.00	$3.20	$3.40	$3.60	$3.80	$4.00	$4.20	$4.40	$4.60	$4.80	$5.00
Fireman	1.75	1.31	1.40	1.49	1.58	1.66	1.75	1.84	1.92	2.01	2.10	2.19
Watchman	1.50	1.13	1.20	1.28	1.35	1.43	1.50	1.57	1.65	1.72	1.80	1.87
Woodman	3.25	2.44	2.60	2.76	2.93	3.09	3.25	3.41	3.57	3.74	3.90	4.06
Corralman	1.50	1.13	1.20	1.28	1.35	1.43	1.50	1.57	1.65	1.72	1.80	1.87
Total	$12.00	$9.01	$9.60	$10.21	$10.81	$11.41	$12.00	$12.59	$13.19	$13.79	$14.40	$14.99

Schedule 3.

SCHEDULE OF PAY FOR PROPOSED BONUS SYSTEM.

Number of logs....	200	201 to 240	241 to 280	281 to 320	321 to 360	361 to 400	401 to 440	441 to 480	481 to 520	521 to 560	561 to 600
Daily cost under wage system—						Base.					
Cost of four lines	$27.00	$20.28	$21.60	$22.96	$24.32	$25.68	$27.00	$28.32	$29.68	$31.04	$32.40	$33.72
Miscellaneous skidder cost	12.00	9.01	9.60	10.21	10.81	11.41	12.00	12.59	13.19	13.79	14.40	14.99
Total cost	$39.00	$29.29	$31.20	$33.17	$35.13	$37.09	$39.00	$40.91	$42.87	$44.83	$46.80	$48.71
Production estimated at 150 feet to log		M 30	M 36	M 42	M 48	M 54	M 60	M 66	M 72	M 78	M 84	M . 90
Cost per M		$0.976	$0.866	$0.79	$0.73	$0.686	$0.65	$0.62	$0.595	$0.575	$0.556	$0.54

V. C. LANGLEY, LAUREL, MISS.;
Logging Superintendent Wausau Southern Lumber Company.

After pointing out the advantages of this system he told of an instance where his men had been promised a day off if they filled the log pond by a given time. Spurred by the incentive the work was finished, yet circumstances arose over which the company had no control and the reward was denied.

"This," he said, "implants a distrust of task work in the employees' minds." Had the bonus system been in use the men would have received reward for extra effort.

Thus, he pointed out, it can be seen that the effect of the bonus system is wide in its scope, it sets all employees, from the general manager down, to looking for and removing the cause of failure. Each employee within his range will in effect become a foreman—is financially interested in the results—therefore motives of friendship or otherwise will not last under a continued drain on his purse. In conclusion he asserted that the bonus system of pay is practical for each department of logging operation. It is in use in sawmills, factories and other like organizations and the speaker said, if given a fair trial, men will become enthused with the idea. The problems of how to meet the high cost of living will have been solved and when the idea has become firmly established, the efforts of the Industrial Workers of the World and other similar organizations will prove ineffective and their teachings forgotten.

Discussion of Mr. Rigell's paper was opened by C. P. Meyer, of Houston, Tex., assistant to General Manager B. F. Bonner, of the Kirby Lumber Company. Mr. Meyer said he was very much interested in a bonus system, and that if a scheme could be devised that would increase the efficiency of each unit of labor it would mean to secure a bigger return on the investment in machinery and equipment.

Mr. Mahoney discussed briefly an attempt of Eastman, Gardiner & Co. to introduce the inefficiency system into its woods operation.

Mr. Harris also told of a limited application of the bonus system in the operations of C. C. Mengel & Bro. Co. at Louisville, Ky.

W. J. Stebbins, of Garyville, La., assistant manager of the Lyon Cypress Company, told of a piece-work system introduced by his company which by making a 10 percent increase in wages the amount of work was increased fully 10 percent. At first the men struck, but in a few days they saw that they would make more money under the bonus system and returned to work. The scheme has since worked out very satisfactorily and in Mr. Stebbins' opinion the men would not care to go back to the straight wage basis.

G. P. Gammill, of Pelahatchie, Miss., of the Gammill Lumber Company, said his company had a limited bonus system in operation.

R. Lee Bass said that the Edgar Lumber Company used to pay substantially all of its woods workers by the thousand, and that the plan worked out well.

Cutting Logs.

A discussion of the cost of cutting logs was started by V. C. Langley, of Laurel, Miss., of the Wausau-Southern Lumber Company, who read the following paper:

The main consideration in log cutting is the saving of timber.

The beginning, of course, is at the stump, and 95 percent of the virgin longleaf yellow pine grows out of the ground like a piece of piling, and should and can be cut within seven or eight inches of the ground.

There are numerous advantages in low stumps; the saving of timber, the elimination of hang-ups where steam skidders are used. This also applies to a considerable extent where skidding is done with teams and wagons.

In cutting the depth of notch will vary according to the size of the tree and how heavily it leans.

My experience is that a large tree that leans heavily should be notched to the depth of six or eight inches, and if after you have sawn in this depth and cut it out you deepen the notch in the heart from two to four inches it will prevent, to a large extent, the pulling of long slivers, which we all know is a frequent and serious damage to the butt log.

In felling trees care should be taken to avoid all stumps possible and also to prevent falling timber across other logs from the first limbs to the top, as this is where we get most of the broken timber.

In measuring up your tree be sure that your sawyers are provided with a correct measuring pole. I use an 8-foot pole, plainly marked every two feet, and 3-, 6- and 9-inch measures on each end. I also use a strip of band iron on each end to prevent pole from being cut. In cutting up the tree we allow as follows: i. e.: short logs three inches, 32-foot logs six inches, and 48- to 54-foot logs nine inches. This allows three inches on each log in case it is cut to short lengths at the mill. I consider that this is plenty of margin for cut-offs and trimmerman, and that more is an unnecessary waste. Logs should be measured and cut so as to take out crooks as much as possible. Where top is smooth and straight we cut down to six inches in diameter.

Before sawing into logs care should be taken that swinging trees are blocked up to prevent splitting.

I do not think it is policy to do any long butting at the present price of stumpage, as there is scarcely a butt log but what you can get enough short timber to considerably more than pay for the cost of handling.

After reading his paper Mr. Langley said he was cutting everything down to 7 inches. A vote was called for and it was found that since the last annual meeting of the association about 15 superintendents had reduced the height of the stumps.

Logging Costs.

In starting a discussion of logging costs C. P. Meyer, of Houston, Tex., assistant general manager of the Kirby Lumber Company, said that the quality of lumber produced should be considered in figuring logging costs. Shortly after last year's meeting of the association he called a meeting of his superintendents to discuss the question of crooked logs. Afterward the boys sent better logs and the result was shown in better average price received for lumber produced.

As to the importance of checking up in detail the various items, Mr. Meyer cited his own experience during the last year. He said that in oil he had shown a saving of $186 a month between June and January. On

Cutter Drivers

The Original Style 40

Shoes Designed by Woodsmen To Hold Calks, Fit Easy and Withstand Hard Wear

Their origin dates back to 1870 when Eau Claire, Wis., was the center of the big lumber industries of the North. At that time Mr. Cutter began in a small way to hand-make boots for the woodsmen thereabouts. These first boots were built after each man's own idea of fit, comfort and durability and in time a style of boot was perfected that met all demands and outwore any other boots brought to this section —and the style became known among lumbermen as **The Wisconsin Driver - Style 40.** For many years these boots were sold only around Eau Claire, but as the lumber interests began spreading out over greater territory and migrating to distant states, the men who had become accustomed to these shoes sent back to Eau Claire for them. Their new companions seeing the superiority of these shoes also wanted them and thus the trade grew until today **CUTTER DRIVERS** are sold in every lumber state of the Union.

But even tho the trade has become so general the original methods of manufacture are still practiced—skilled shoemakers still hand-make them and the same high grades of leather—some imported—go into **CUTTER DRIVERS.**

Lumbermen Who Want the Best

will find our line in every way satisfactory for we have religiously stuck to the first principles in honor-made shoes and the quality is the best for the money. To enable you to select just the style footwear required in your work, we have had printed an illustrated catalog describing our various styles and want every lumberman, lumberjack, riverjack and woodsman to have a copy.

If you will send us your name and address we'll see that you get a copy of this illustrated book free — without any strings tied to it. Write today.

Every Cutter shoe is plainly marked on the sole — None genuine without this Trade Mark.

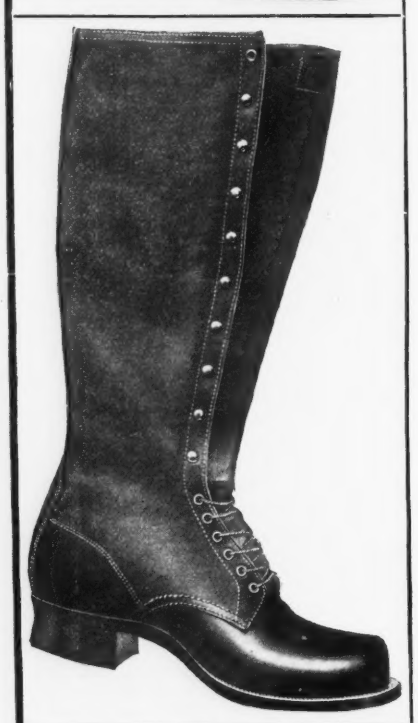
A. A. Cutter Co.,

Eau Claire, Wis.

Originators of the Wisconsin Brand. Manufacturers of Driving Shoes, Sporting and Cruising Boots; also Witham's Patent Boot Calks — which wear longer and hold better than all others.

R.K.L.&C. CO. GRAND RAPIDS MICH.

Quality Is Responsible



FOR

our national reputation as manufacturers of Loggers' shoes.

Back of every pair we make are forty-eight years of experience in making shoes for Lumbermen.

Time, experiment and experience has taught us what leathers are best and longest lived and what kind of shoe construction is best to stand the unusual strain of severe, hard wear such shoes have to stand.

Also our first hand knowledge of just what is needed enables us to build the practical, foot fitting kinds and styles your men demand.

Send for our Catalogue.

Rindge, Kalmbach, Logie & Co., Ltd.

GRAND RAPIDS, MICH.

feed, by careful checking, he had reduced the cost per mule per month from $11.16 to $9.34.

The discussion showed that most companies have excellent methods of determining costs and that the superintendents are giving great attention to each of the many items that go to make up the total charged to woods operations. While the accounting methods of the various manufacturers differ so widely as to make intelligent comparisons of respective items impossible, yet the discussion, which was frankly participated in by most of the superintendents present, brought out many very helpful suggestions.

Total costs of logging from stump to pond varied among the different concerns and at different periods with each concern. For example, one concern's cost in July was $2.44, but in August it was $2.84, the difference being due to conditions under which the work was carried on.

Another concern that was cutting 32 to 54-foot logs in timber running about 12,000 feet to the acre had an average cost of $2.93 a thousand during the first six months of 1913.

Still another concern found its cost to be about $4.17 a thousand of late, but as compared with those having lower cost this concern charged many more items to logging cost and subdivided those items minutely.

One large operator's cost for three months—October, November and December, 1912—averaged $3.17; while the same company's cost for June, 1913, was $3.12.

A cost of $3.72 was reported by one very able superintendent, who said he was hauling logs about 29 miles; this cost being a 6-months' average. His logs were running about 7 to 1,000 feet and 10,000 feet to the acre.

With a logging cost of $3.43 a thousand one superintendent said his logs scaled an average of 209 feet. He was using slip-tongue carts and hauling from 300 to 600 yards; the average distance being very little more than 300 yards. He uses three crews of seven men each and four mules to each cart. His timber cut about 7,000 feet to the acre.

This very interesting discussion was at its height when Monday's session of the convention adjourned.

TUESDAY MORNING.

The morning's session Tuesday was opened at 10 o'clock by the appointment of the following committees:

Resolutions—C. O. Lauve, of Charleston, Miss., Lamb-Fish Lumber Company; L. E. Landry, of Garyville, La., Lyon Cypress Lumber Company; and D. A. Pennington, Groveton, Tex., Trinity County Lumber Company.

Nominations—Oscar Marsan, Clio, La., Opdenweyer-Aleus Cypress Company; J. C. Colgon, Holly Ridge, La., Norman Lumber Company; B. P. Head, Tuscaloosa, Ala., Kaul Lumber Company.

Civil Engineering Problems.

Following the appointment of committees Secretary Boyd read a paper on "Engineering Problems in Logging Operations" prepared by H. W. Bell, of Laurel, Miss., who was unable to be present. Mr. Bell's paper follows:

I deem it a privilege of no small consequence to be selected to appear before this honorable body to discuss a question that no doubt many of you have given considerable thought. To the modern logging operation, the railroad is a necessity, and the superintendent of that operation may be expert on logging cost and a No. 1 executive, but to secure a railroad that for the least cost best serves this purpose he should have an engineer well versed in railway construction. This engineer should report to the superintendent, who will point out to him what territory he desires to log, give him sketches of the timberland and assist him in planning his lateral spurs from his main line.

Gentlemen, no doubt many of you have had sad experience with some young engineer, employed from the office and sent out to you to do your bidding. This engineer may have been out of college only a few weeks or months, and knows only the technical part of his work; hence his work is a failure, and the engineering profession is censured by the lumber company.

You must not employ a boy to do a man's job; you must have an engineer who understands the complex problem of location. The solution of these varied problems is more or less independent. The guiding principle applicable to all departments of engineering, that the best structure is that which for the least cost best serves the purpose for which it was intended, should control even though the resulting structure be inferior in point of scientific design to some other.

The best roads as regards construction and grade may be a failure because of excessive first cost, while cheap construction will entail such heavy operating expenses that it may be equally unprofitable.

Construction Points.

The alignment must be as free from curves as the topography of the country will allow, while heavy grades are at the same time excluded. These two requirements conflict, and must be as well adjusted as possible. The amount of earthwork and bridging must be kept down to the lowest limit. The length of railroad and the time it will be in operation enter largely into the construction. The superintendent should give these data to his engineer, who in turn will secure the class of locomotive which will operate over his road, and with the information he can figure his grade line to pull the maximum load that will be required by his superintendent.

How many of you have had your troubles with the average county surveyor? A man elected by the people regardless of his professional knowledge, who, through ignorance, runs an erroneous line, bringing on discord, dissatisfaction and possibly legal procedure among your neighbors. If such is the case with a native, you have sown the seed of public sentiment against yourself and your company, whereas an engineer with experience and a little diplomacy can prove his work to the satisfaction of all concerned. Many of you possibly think that a county surveyor has the authority vested in him by the law of establishing a line. This is a mistake; he can not establish a line where all parties are not absolutely satisfied with his survey. If dissatisfaction arises it is a question of arbitration and for the courts to decide. He must show that he has followed the Government survey, and the Government survey will hold, even thought it be proven that the original Government survey was in error.

A number of engineers two years ago endeavored to put a bill through the legislature requiring all engineers and surveyors to stand an examination for competency before an engineering board appointed by the governor, but this was met by opposition of the surveyors all over the State, and our effort was in vain.

Gentlemen, I bring this in to impress upon you that the greatest engineering problem that faces you is securing a competent engineer. I reluctantly admit that the engineering profession is hampered by men claiming to be what you are looking for, but who can not "deliver the goods."

Feeding Work Stock.

Perhaps on no subject discussed at the meeting was there less accurate knowledge disclosed than on that of feeding work stock. Discussion of this subject was started by President Baker, who referred to a paper he had prepared on "Feeding Work Stock."

In his paper Mr. Baker referred briefly to some of the technicalities connected with the principles and practices of feeding, which, in his opinion, the feeder should understand in order that he may be able intelligently to apply the principles to the practice. He pointed out that the body of the living animal contains and is made up of a number of substances very similar to those found in plants, such as water, nitrogenous matter or protein, fat, and mineral matter. In the act of living these materials in the animal body are constantly being used up and if not continually supplied through the medium of the various plant food products, the animal will gradually become emaciated and no doubt ultimately die.

In the case of herbivorous animals such as the common domestic animals of the farm he declared their food should contain, in addition to those mentioned, carbohydrates, or nitrogen-free extract, of which starch and sugar are good examples. He called attention to food materials which must be used to build up and nourish the body tissues of the animal, among them being water, ash or mineral matter, protein and carbohydrates, briefly describing each.

In speaking of oats he said analysis shows that in 100 pounds of oats there are 11 pounds of water, 3 pounds of ash, 11.8 pounds of protein, 9.5 crude fiber, 59.7 pounds of carbohydrates and 5 pounds of fat.

He declared that while it is necessary to know the percentage of different nutrients contained in oats, it is also very important to know what percentage of the amount of each substance can be digested by the animal. A chemical analysis, he declared, has shown the following percentages for oats:

Dry matter, 70; protein, 78; crude fiber, 20; carbohydrates, 76; fat, 83.

Balancing the Ration.

After having acquired an intelligent conception of the different nutritive substances contained in food stuffs together with the part each plays in building up the various tissues of the animal body in producing power and energy, also the average amounts of these substances and, lastly, their percentage of digestibility, he said the next step was to be able to supply them in such quantity and proportion as will best suit the needs of the animal whether for maintenance, for work of different grades, or for the production of flesh and fat.

He cited several illustrations of how digestible food nutrients may be wasted when a ration is not approximately balanced, both as to material and nutrients. He also illustrated with figures the ratios of dry matter, protein and corbohydrates in corn, timothy, alfalfa, oats and combinations of feed. He said oats are generally conceded to be the food par excellence for the horse or mule since the digestibility of the nutrients happens to be about typically balanced in this cereal. He said oats may be looked upon as an expensive food stuff, if they have to be purchased, and that it is possible to obtain the same amount of nutritive substance in the same nutritive ratio by mixing together other cheaper, palatable and digestible materials which allow the animal the same quantity of digestible nutrients. He cited illustrations to verify his assertion.

He urged that it is not the bulk of the food or the form in which it is most familiar to us that goes to nourish the animal body, but the soluble digestive nutrients contained in it.

In his comment on system in feeding he said in part:

A feeder may have all the information necessary concerning feeding standards, balanced rations, nutritive rations, etc., and yet he can not possibly secure the maximum of good results from the possession of such knowledge unless he employs a rational and intelligent system in the feeding of his animals.

Work horses and mules are living under artificial conditions in respect to their feeding, and are solely at the mercy of the intelligence, or otherwise, of their owners for the manner, or system, in which their food is supplied to them.

Under natural conditions the horse or mule, owing to the requirments, feeds quite often, but partakes of little at a time. The main reason for this is, the relatively small capacity of its stomach—not more, perhaps, than from fourteen to seventeen quarts—the short time it takes for the stomach to empty itself, and hence the necessity for frequent replenishment.

In order to obtain the most satisfactory results, under domestication or during work, it is reasonable to presume that the animal's natural method of feeding should be approximated as closely as practicable, or the amount of food required by the animal in twenty-four hours, should be divided into at least two feeds. Some animals may, and do, become habituated to a lesser number of feeds a day with apparently satisfactory results. However, it is a risky method because, instead of getting as close as practicable to the animal's natural way of feeding, it is getting further away from it.

Many who lose valuable mules from digestive troubles are wont to place the blame on the kind or class of feed the animals have been given; while, in reality, the blame properly belongs to the unnatural and unintelligent manner in which they receive their feed. A properly balanced ration of the very best quality of oats, when fed intelligently and systematically, may not induce a case of colic during the natural lifetime of the animal. However, if the entire day's ration of oats is fed at one time instead of its being divided into three parts, it is liable to so disarrange the digestive apparatus as to set up a fatal case of flatulent colic, because the digestive organs in the horse or mule are not constructed, nor prepared, to "handle" such an excessive quantity of food material all at once. In such a case, are we to blame the oats for the trouble, or the unintelligent manner in which they are fed to the animal? And so it is with other kinds and classes of concentrated feeds; they require system in their administration to prevent indigestion, colic, etc., and to produce the best results in the capacity of the animal for work.

A point of very great importance for the owner or feeder to bear in mind, therefore, is, that an animal's food may be properly balanced as to its digestible nutrients; it may be correct as to quantity and nutritive ration; in fact, be perfect in every particular so far as supplying the needs of the animal is concerned; and yet, if an intelligent system is not employed in the feeding of it, the otherwise perfect requirements may be altogether vitiated.

He said that regularity in work brings regularity in feeding and these two things are greatly conducive to comfort and long years of usefulness. He told of the various grades which should be fed to work horses and thoroughly explained each. In conclusion he declared that it is just as important that a horse's diet contain a variety of food as it is for a man's. No horse, he said, can be at his best if he has but one thing to eat day after day and week after week. While it is true that the horse can be maintained for a short period on oats and hay, he said it seems reasonable that equally good or better results are obtainable and the cost of keeping often lessened by adopting a more extended bill of fare. Experiments with other domestic animals, he declared, plainly show the advantages of a judicious form of combinations of feeding material over any single one.

Discussion.

One superintendent in discussing the feed question said that he fed 23 pounds of oats and 17 pounds of hay to each mule daily, but that the mules were fed in an open corral.

Mr. Baker advocated separate feeding of stock in order that each animal might get his proper share. He said also that he understood that the Federal government's standard for feed was for a 1,400-pound mule 18 pounds of oats and 8 pounds of roughage daily.

Les pedeza hay was shown to be increasing in favor as a feed for work stock. One operator is raising his oats and his les pedeza hay, saving in a single year $400 on his oats expense and producing the hay at about $5 a ton as compared with from $20 to $28 a ton for timothy. It was shown that many concerns had land fit for cultivating grain.

Feed used commonly was oats and timothy hay. Some, however, were using prepared feeds and many were feeding alfalfa hay with success.

President Baker suggested the importance of considering the food content of the various grains in estimating their relative values, dealing with proteins, carbohydrates etc., rather than with oats, hay, corn etc.

Standardizing Logging Methods.

Secretary Boyd at this stage read a letter in part as follows from Prof. R. C. Bryant, of Yale Forest School, on the standardizing of logging methods:

I have traveled over the greater part of the South during the last seven or eight years, and have visited a good many operations. One thing that strongly impressed me in the logging work has been the lack of standardization of logging methods, even where operators were working under conditions that were very similar. I have always felt that the Southern logger knows too little about what his neighbor is doing, and for several years I have advocated in a quiet way amongst my friends in the South who are engaged in the lumber business the advisability of sending their logging superintendents around to visit operations of at least the companies in their vicinity.

I believe that your association can do a great work by attacking the problem of standardizing methods of operation in the South. It is possible that you already have this in mind. It would seem to me that it would be money well spent to employ one of your most efficient loggers to study the various methods of operation, and to bring before the members of your association the best points of the more efficient operations. I do not know of anything that would be of more real value to the industry than work of this sort. My interest rests more largely with the Southern logging work than with that of any other section, because I am more familiar with it, and I hope some day to have an opportunity to meet you and talk over certain things which I believe would be of mutual interest.

The general discussion at this point was closed and T. B. Mahoney, of Laurel, Miss., read a paper on "Fuel for Logging Locomotives."

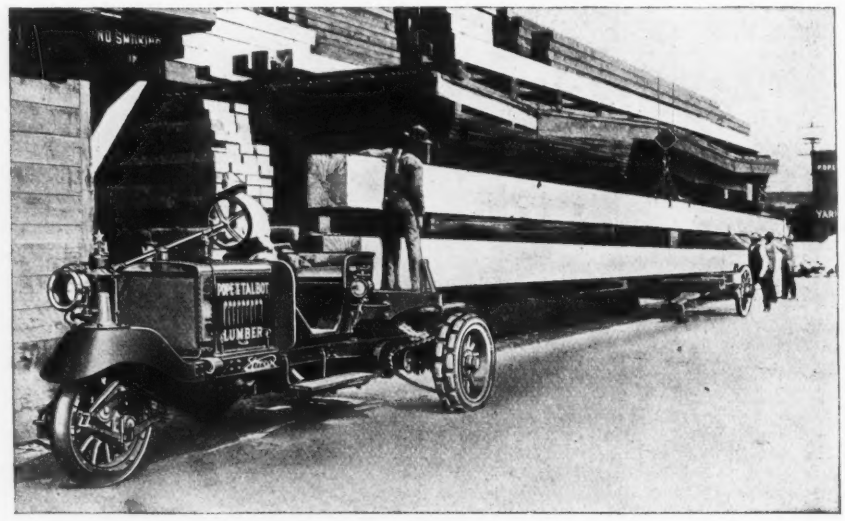
That the close proximity to coal and oil supply requires the fuel subject to be worked out on an actual economic basis, was the opinion of Mr. Mahoney, who formerly was with Eastman, Gardiner & Co. High freight rates, he said, with the uncertainty of regular supply, especially during the winter, deserve serious consideration.

He called attention to the use of coal and cited as a concrete daily example the railroad operating as a common carrier and the lumber company hauling nothing but logs on a regular skeleton type of logging car over the same stretch of track; the railroad company using on an average seven tons of coal, costing $21.70 to move 1,800 tons, a distance of 80 miles. The lumber company moves practically the same tonnage 128 miles with 18 cords of wood, costing $18. The lumber company, he said, moves more of its tonnage uphill than the railroad company.

Wood fuel is scattered over the entire belt, alongside any of the logging tracks. To make it available, he said it was necessary to send out crews with teams and tools to gather up and pile the wood along the track, or do this work by the contract. When it is found that there is more fuel on the track than is needed to haul the logs available, the fuel must be handled again, or the engines misdirected. If a forest fire burns it up during the night it adds to cost and fuel delays. If none of these things happened, he said, one occasionally finds engine delays because some engine behind that does not want wood is waiting on some engine ahead taking fuel, and no matter how efficient the train movement, this will occur.

To overcome these difficulties, he said an engine has been devised consisting of a boiler, small hoisting engine, drag, saw and splitter, all mounted on a flat-car 12 by 40 feet. Cull logs are loaded on cars and

What Are The Particular Advantages of the Knox *Martin Tractor* for the Lumber Trade?



The Knox-Martin Tractor is a three-wheeled motor vehicle which can be coupled to any horse type of truck body at the fifth wheel by means of an ordinary king pin. ¶ It can thus be easily and quickly transferred from one body to another so that by using several wagons the tractor can be kept constantly busy without delays for loading and unloading. ¶ Over half the paying load is carried on the steel tires of the rear wagon wheels, thus avoiding the heavy upkeep cost of rubber tires. ¶ The single steering wheel in front enables the tractor to be turned around with its load in the narrowest street or backed readily into an alley. ¶ The tractor is supported on separate springs from the load, thereby securing a degree of flexibility which effectually cushions the motor, transmission and drive from all sudden starting or stopping strains. ¶ All vital parts of the Martin Tractor are more accessible than on a touring car, facilitating prompt repairs.

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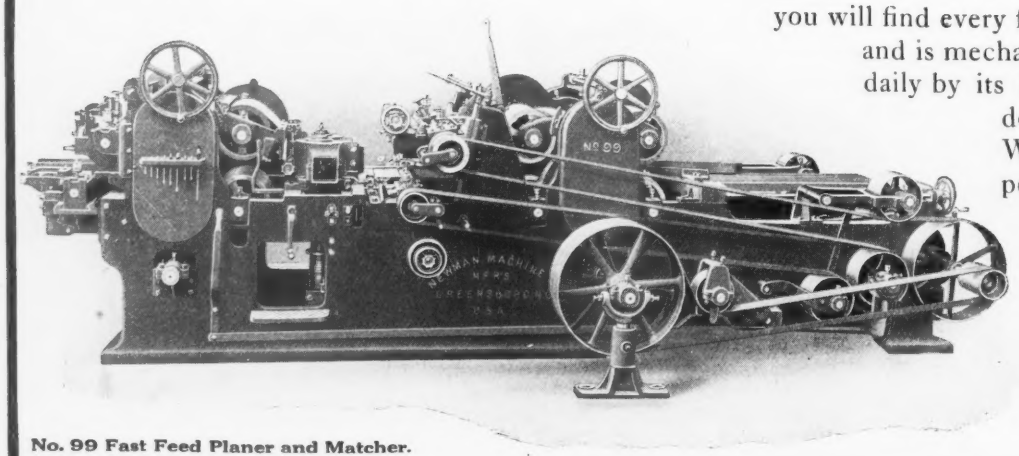

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brought alongside, where they are cut and split into 2-foot lengths. This machine is located at the concentration point and all the unpleasant features of wood fuel are thus eliminated. This machine and crew will turn out 40 cords of wood a day, and after skidding and loading are added the cost is well below $1 a cord.

The speaker declared that the damage by fire set by wood-using locomotives is no greater than with the coal burner, as the former is equipped with the Radley & Hunter stack, which can not be rated high for artistic beauty, but, nevertheless, is very efficient.

Another feature which should appeal to wood fuel and lumber operation, the speaker said, is the present effort to crystallize public opinion on the conservation of raw material. He asked why a lumberman will buy coal that is mined far from the base of his operation by a laborer from whom he or his community realize nothing and from which the coal operator must make a profit, when right at hand he had the greatest heat producer in the fuel world at the lowest cost per unit.

Following the reading of Mr. Mahoney's paper a query brought out the fact that eight superintendents were burning coal exclusively, and seventeen were burning wood exclusively. Others were burning part of each. Inquiries regarding the costs of wood showed a wide range, but it was shown also that to the estimating of prices little attention was given to the standard cord as a standard of measurement.

Mr. Mahoney said that he was accustomed to use for fuel everything left in the woods. In some operations, however, where everything is sent to the mill, little is left for fuel.

Welfare Work in Logging Camps.

The next number on the program was a paper on "Welfare Work in Logging Camps," prepared by N. C. Schlichter, of Charlotte, N. C., secretary of the International Committee, Y. M. C. A., in charge of welfare work among lumbermen. Owing to Mr. Schlichter's absence, Secretary Boyd read the paper, in part, as follows:

All men have a social side that must be cared for. The better the living environment in the camp the more interest men will take in their work.

J. D. Young manager of the Inman-Poulsen Logging Company, of Kelso, Wash., said recently: "We have been devoting our entire attention to the improvement of the machinery in the camps, but we have forgotten very largely the improvement of the men." I suppose this has been generally true in all industries as well as in the lumber business. It is time to change things wherever possible, and changes of this kind pay, and pay big.

Welfare work centers about three great human interests: health, education, pleasure.

On the first of the points mentioned Mr. Schlichter urged screening and general sanitation of closets, referring to the danger otherwise of typhoid fever, and suggested the deliberate cooking of meals for workmen instead of allowing their own hasty preparation of food, and urged under the same head the preventing of accidents, recommending also health talks, especially to the colored help. In this connection he said:

> It is well to ask also if our doctors are being given proper equipment for much of their work. In a big mill center the other day a doctor said to me: "We need an operating room here in the worst way for emergency cases." Many other places need such equipment. What a saving this would mean in quick recovery, in suffering, in accident claims, and what an asset in the increased good will of the workmen. A book called "Safety," by W. H. Tolman, just published, is of great value to all employers of labor.
>
> Bathing is of such direct relation to health that no camp should be without facilities of some kind for this purpose.

The address especially emphasized the need of education, Mr. Schlichter recommending adequate facilities in school houses, their equipment, proper supply of books, magazines, a good talking machine for each, and said: "With such equipment as suggested the school teachers would find a very interesting general line of work to do."

Mr. Schlichter considered recreation a matter of great importance as affecting working conditions and offered suggestions on the observance of holidays, providing and superintending games, etc., and offered the coöperation of the Industrial Department of the International Committee of the Y. M. C. A. along this line, as along any proposed line of welfare work, giving the address of that department as at Charlotte, N. C.

Mr. Schlichter quoted the Hon. J. B. White, of Kansas City, Mo., as saying on this subject: "Human life is our greatest asset and its waste is a permanent loss. * * * We want to increase the ratio of the value of the man to the soil, of man to all and any of his products, of man to money, and to put man first all the time."

Building Logging Cars.

The construction of logging cars proved to be a subject in which many superintendents were greatly interested. One member said he had suffered four very serious wrecks from the breaking of log reaches ("roosters"), and he asked for advice.

On the question being put to the convention a majority of the members favored the use of cars built on a standard basis with 24-foot bunk centers and with reaches between link and pin drawheads, the reaches made of round poles reinforced with iron. This is for use with long logs. A great many superintendents are using these reaches with success.

At the conclusion of the discussion of logging car construction the session adjourned.

TUESDAY AFTERNOON.

The concluding session of the convention was opened at 2 p. m. with a discussion of the use of steam skidders. In this discussion several speakers emphasized the importance of close cooperation between the sales office and the logging superintendent.

V. C. Langley suggested that the sales manager himself ought to get into the woods and find out occasionally what kind of timber will be logged for six weeks following his visit.

J. B. Work asked how many superintendents received daily lists of orders showing the kind of stock wanted. Only one superintendent received daily reports, a few received weekly and a considerable number monthly reports.

President Baker asked how many received orders for bill stock, and, of course, all received such special orders. The president then asked how many were in the habit of cutting special stock 50 percent in excess of the orders received. Nobody was willing to admit having done so, but the laughter that greeted the question suggested that perhaps a few may have been guilty of indiscretions in cutting bill stock.

When a discussion of hight at which stump should be cut was started the fact was disclosed that this subject is receiving more and more attention from operators. The hight varied from 18 to 30 inches, pine operators varying the hight when the trees had been cupped or boxed for turpentining.

Use of Steam Skidders.

One superintendent said that for a while he used a two-line skidder, but as he was not getting enough logs he put on a rehaul. This reduced his skidding expense 12 cents a thousand. He uses the rehaul in scattered as well as in thick timber and he cuts everything in the woods and sends it to the mill; he averages 250 logs to the line and uses eleven men, including the skidder foreman. He uses one line on each side of the skidder, but if one gets cleaned out first he switches both to one side, requiring only seven minutes to change a line and get ready for skidding.

Another very successful superintendent who uses a four-line rehaul said that the secret of successful skidding is largely in the setting. About twenty minutes is the average time he requires. He pulls about 650 logs to each machine, the logs being from 32 to 54 feet long, six logs to the thousand feet and 12,000 feet to the acre. He skids everything to the track where the culling is done and rejected stuff left. Scaling is done at the loader. Heart ties are made of rejected logs. The skidder skids about 40 percent more than the loader can load, so he puts both to work when the loader catches up. He sets his lines 80 feet apart, moves twice a day and pulls 660 feet.

The length of service of wire rope was discussed, one operator saying that if he did not get 10,000,000 feet from a line he was sure it had been abused. He uses an 800-foot line with a swivel and socket at the tongs. He used a power rehaul two days, but returned to the use of horses. His horses weigh about 1,400 pounds and he uses three horses to the line, changing every half hour, thus alternating an hour's rest with a half-hour's work. This superintendent had a four-line skidder, but uses only two lines, working ten men, including the foreman. Each line handles from 40,000 to 45,000 feet a day of 22- to 38-foot logs running 10,000 feet to the acre.

Track Laying.

Track laying came up for considerable discussion. In general the tendency seems to be toward the use of heavier steel. The weights mentioned, however, varied from 35-pound on spurs to 60-pound on main line track. The average steel gang takes up and puts down from three to six rails per man per day. Steel gangs generally numbered about fourteen men and the rate of pay seemed to be fairly uniform.

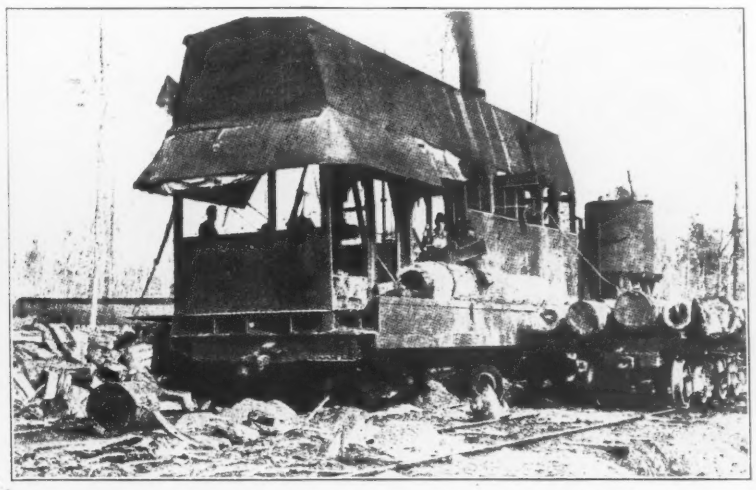
Raising Vegetables and Grain.

As C. C. Curry was ill Monday and unable to be present, he was asked today to tell about feeding his workmen. Mr. Curry dwelt somewhat in detail upon his methods and costs, but one point of special interest and importance that he brought out was that of raising vegetables and grain on cut-over land.

He said that he uses some of his men around the camp, barn men and others to do the garden work, raising peas, beans, cabbage and potatoes. He raises chickens also. In raising potatoes he gets two crops a year. The garden spot is cleared the first thing when a camp is started.

J. N. Ward submitted in detail his costs of feeding his workmen and the subject was discussed at considerable length. The consensus was that good food properly served is about the best investment that can be made in a camp. Special emphasis was laid on pie, many declaring that if pie is served the men will overlook a great many other shortcomings. T. B. Mahoney said that the large place that New England people have in history is due to the pie they always have had.

N. C. SCHLICHTER, CHARLOTTE, N. C.
Secretary of the International Committee of the Y. M. C. A.



HOME MADE DEVICE FOR SAWING WOOD FOR LOCOMOTIVE FUEL.

R. LEE BASS, GLENMORA, LA.;
Logging Superintendent Louisiana Sawmill Company.

Officers Elected.

The report of the nominating committee being called for at this stage, Oscar Marsan reported for the committee the following nominations:

President—J. B. Baker, Hodge, La., Hule-Hodge Lumber Co.

First vice president—C. P. Meyer, Houston, Tex., Kirby Lumber Co.

Second vice president—Oscar Marsan, Clio, La., Opdenweyer-Alcus Cypress Co.

State Vice Presidents.

Alabama—C. C. Curry, Vredenburgh, Ala., Vredenburgh Sawmill Co.

Arkansas—L. R. Wilcoxen, Crossett, Ark., Crossett Lumber Co.

Florida—S. Rigell, Florala, Ala., J. S. Betts Company.

Georgia—J. P. Work, Lumber City, Ga., Ocmulgee River Lumber Co.

Louisiana—R. Lee Bass, Glenmora, La., Louisiana Sawmill Co.

Mississippi—V. C. Langley, Laurel, Miss., Wausau-Southern Lumber Co.

Texas—D. W. Pennington, Groveton, Tex., Trinity County Lumber Co.

North Carolina, South Carolina and Virginia—Bowman Marshall, Newbern, N. C., John L. Roper Lumber Co.

On motion the report of the nominating committee was adopted as read.

The last subject considered on the program was the change of date of the annual meeting. On being presented in the form of a motion the convention unanimously voted to change the date from the week of September 25 to 30, as at present, to one month later, October 25 to 30. This does not fix the days on which the meeting shall be held, but provides only that it shall be held between the dates mentioned.

The convention then adjourned.

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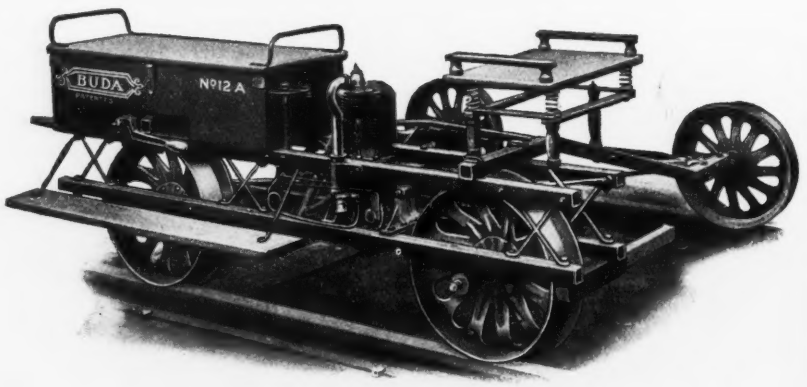

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THOSE IN ATTENDANCE.

Alabama. Birmingham—R. J. Williams, Birmingham Rail & Locomotive Co.

Tuscaloosa—B. P. Head. Kaul Lumber Co.

Vredenburgh—C. C. Curry, Vredenburgh Lumber Co.

Arkansas. Huttig—W. H. Lee, Union Saw Mill Co.; G. C. Fyle, Union Saw Mill Co.

British Honduras—A. J. Stanley, C. C. Mengel & Co.

Florida. Apalachicola—E. C. Mann, The Cypress Lumber Co.

Bagdad—C. M. Munson, Bagdad Land & Lumber Co.; F. W. Stevens, Bagdad Land & Lumber Co.

Pine Barren—J. N. Ward, McMillan Mill Co.

Punta Gorda—C. M. Carrier.

Southport—W. S. Sismon, Southport Lumber Co.

Georgia. Lumber City—P. J. Duston, Ocmulgee River Lumber Co.; J. B. Work, Ocmulgee River Lumber Co.

Illinois. Chicago—W. F. Callender, Hart-Williams Coal Co.; C. T. Henthrone, Macomber & Whyte Rope Co.; Sidney Clemons, AMERICAN LUMBERMAN; Henry H. Salusbury, American Steel & Wire Co.

Kentucky. Louisville—R. H. Allen, C. C. Mengel & Bro. Co.; D. C. Harris, C. C. Mengel & Bro. Co.

Louisiana. Alexandria—E. B. Harrell, Alexandria Lumber Co.; William Alcott, Brown-Roberts Hardwood & Shingle Co.

Baldwin—Dalph Parro, Baldwin Lumber Co.

Garyville—V. E. Landry, Lyon Cypress Co.; W. J. Stebbins, Lyon Cypress Lumber Co.

Glenmora—R. Lee Bass, Louisiana Saw Mill Co.

Hammond—R. M. Tycer, Genesee Lumber Co.; W. H. Nalty, Hammond Lumber Co.

Hodge—A. H. Allen, Huie-Hodge Lumber Co.; J. B. Baker, Huie-Hodge Lumber Co.

Holly Ridge—J. C. Colgan, Norman Lumber Co.

Kentwood—George W. Reed, Amos Kent Lumber & Brick Co.; J. S. Talley, Brooks-Scanlon Lumber Co.

Lake Charles—George M. King, Powell Lumber Co.

Ludington—E. G. Cates, Ludington Lumber Co.

Monroe—J. E. Mason, Grayling Lumber Co.; J. O. Snively, Grayling Lumber Co.

Morgan City—H. M. Cotton, Cotton Bros. Lumber Co.; F. M. O'Brien, Cotton Bros. Cypress Co.

Mound—C. S. Stetson, Pelican Cooperage & Lumber Co.

Natalbany—W. D. Strong, Natalbany Lumber Co.

New Orleans—B. R. Ellis, Southern Cypress Manufacturers' Association; Fred Foley, Independent Powder Co.; J. S. Huey, Woodward Wight & Co.; R. A. McLaughlan, Lumber Trade Journal; A. B. McRedmond, J. H. Menge & Sons, Ltd.; Joseph O. Schwartz, Joseph Schwartz Co., Ltd.; H. R. Seughton.

Reeves—P. J. Spofford, Clear Creek Lumber Co.

Slidell—T. M. Arnold, Salmen Brick & Lumber Co.; L. T. Miles, Salmen Brick & Lumber Co.

Clio—Oscar Marsan, Opdenweyer-Alcus Cypress Co.

St. Landry—J. E. Meginn, Jr., Climax Lumber Co.

Strater—I. W. Ott, Owl Bayou Cypress Co.

Minnesota. Duluth—H. W. Fletcher, Clyde Iron Works; C. C. Kelly, Clyde Iron Works; Charles H. McIntosh, Steam Machinery Publishing Co.

St. Paul—J. L. Praytor, American Hoist & Derrick Co.

Mississippi. Arbo—H. P. Wainwright, Lumber Mineral Co.

Charleston—C. O. Lauve, Lamb Fish Lumber Co.

Chicora—Jaxes T. Ward, Robinson Land & Lumber Co.

Columbia—W. W. Wolfe, J. J. White Lumber Co.

Columbus—O. E. Smith, Columbus Lumber Co.

Electric Mills—R. T. Gallagher, Sumter Lumber Co.

Hattiesburg—W. D. Bailey, Newman Lumber Co.

Kiln—E. Finch, Jordan River Lumber Co.; C. J. Pettibone, Jordan River Lumber Co.

Knoxo—G. R. Swift, Swift Lumber Co.

Laurel—G. W. Blackledge, Gilcrist Fordney Co.; V. C. Langley, Wasau Southern Lumber Co.; J. T. Mahoney, F. J. Stevens, Gilcrist-Fordney Co.; J. R. Carr, Eastman, Gardner & Co.

Logtown—James M. Gievens, H. Weston Lumber Co.; J. S. Otis, H. Weston Lumber Co.

Lumberton—J. F. Howard, Wells Lumber Co.

Lyman—R. W. Cummings, Ingram-Day Lumber Co.

Millard—E. O. Batson, Batson-McGehee Co.

Norfield—A. W. Brewer, F. W. Furlow, Butterfield Lumber Co.

Pelahatchee—G. P. Gammill, Gammill Lumber Co.

Picayne—R. J. Williams, R. J. Williams Lumber Co.

Quitman, Thomas Laffin, Mississippi Lumber Co.

Sardis—T. B. McCormick, Carrier Lumber & Mfg. Co.

Missouri. St. Louis—Oliver O. Bright, St. Louis Lumber Co.; L. D. May, A. Leschen & Sons Rope Co.

New York. New York—J. H. Dickinson, Lidgerwood Mfg. Co.; L. O. Piersol, Lidgerwood Mfg. Co.

Tennessee. Nashville—Paul Wooten, Southern Lumberman.

Texas. Bessmay—J. M. Swetman, Kirby Lumber Co.

Bronson—J. W. Lewis, Kirby Lumber Co.

Browndel—J. H. Hooker, Kirby Lumber Co.

Call—J. F. Woods, Kirby Lumber Co.

Evadale—L. G. Smith, Kirby Lumber Co.

Fuqua—F. L. Dunham, Kirby Lumber Co.

Groveton—D. W. Pennington, Trinity County Lumber Co.

Houston—C. P. Meyer, Kirby Lumber Co.

Huntsville—W. H. McGregor, Central Coal & Coke Co.

Kirbyville—J. L. Britton, Kirby Lumber Co.

Roganville—E. S. Stone, Kirby Lumber Co.

Silsbee—R. F. Hawthorne, Kirby Lumber Co.; R. D. Thomas, Kirby Lumber Co.; R. L. Weatherby, Kirby Lumber Co.

Waterman—R. E. Pargeter, Waterman Lumber & Supply Co.

ASSUMES GREATER RESPONSIBILITIES.

Manager of Mills and Logging Becomes Assistant to General Manager —C. P. Meyer Promoted.

C. P. Meyer, of Houston, Tex., who was on September 24 made assistant to General Manager B. F. Bonner, of the Kirby Lumber Company, brought to the convention twelve of his logging superintendents. Mr. Meyer has from the beginning of the Southern Logging Association been one of its most faithful members, being first vice president of the organization, attending all its meetings and taking an active part in its discussions.

The opinion Mr. Meyer holds regarding the value of the association to the logging superintendent is evidenced by his bringing so many of his men with him. But for the recent heavy rains which have demoralized logging operations in some sections Mr. Meyer would have brought twenty-five of his men to the meeting.

Mr. Meyer's promotion was announced in a general order sent out from the headquarters of the Kirby Lumber Company, Houston, Tex., under date of September 24, signed by B. F. Bonner, vice president and general manager, and approved by John H. Kirby, president. The order read as follows:

"Effective this date the position of manager of mills and logging is abolished and C. P. Meyer is appointed assistant general manager, with headquarters in Houston. In addition to his new duties he will continue in charge of operations as heretofore."

C. P. MEYER, HOUSTON, TEX.;
Assistant General Manager Kirby Lumber Company.

This promotion is a well-deserved recognition of long and faithful service by a competent man. Mr. Meyer is yet a young man, but is considered one of the best mill and logging operators in the South. His service under John H. Kirby dates back to 1894, at which time he took charge at Silsbee, Tex., of the shops and machinery of the Texas Pine Land Association, a company composed principally of Boston capitalists who had been induced by Mr. Kirby to make large investments in the pine lands of eastern Texas. One year later, in 1895, Mr. Meyer entered the company's mill at Silsbee as saw filer, having charge of the filing department until the mill was leased three years later to the Industrial Lumber Company. He then resumed his former position as manager of the shops and machinery of the company, continuing in that position until 1901. In October, 1901, John Henry Kirby, having practically completed the plans by which the Kirby Lumber Company was organized, and purchased a number of the more important East Texas mills, Mr. Meyer took charge of and started the Silsbee mill, preparatory to the taking over of the other mills purchased by the Kirby Lumber Company on the 1st of the following January.

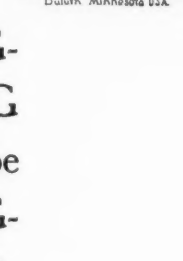
After the mill started he took the position of filer and manager of rolling stock, remaining there until May, 1902, when he was placed in charge of the Silsbee and Lillard mills as manager. He remained in that position until 1905, when in June of that year he was transferred to Mobile, Tex., to reconstruct and start in operation the mill at that place, which had been taken over by the company, and which had been idle for a number of years. Within six months he had accomplished this task satisfactorily, the mill was in good shape and running smoothly, and in October, 1905, he was made manager of the Bess May mill, this being the largest and most modern mill in the South at that time and the best of the plants owned by the Kirby Lumber Company. Here he remained until May, 1906, when the death of F. M. Aldridge made vacant the position of manager of mills and logging, and Mr. Meyer was elevated to that important post. For six years he has had charge of operations of the company, and through his accurate knowledge of every phase of the business and his energetic, up-to-date methods has succeeded in bringing the great organization up to the highest possible stage of efficiency in every department. The necessity for some of the burdens of the general managership of this vast enterprise to be lifted from the shoulders of Mr. Bonner resulted in the selection by Mr. Kirby and Mr. Bonner of Mr. Meyer as assistant general manager, and in future his duties will be more of an executive nature than they have been before.

Having a corps of trained assistants in the operating department, the advancement of Mr. Meyer to the position of assistant general manager has resulted in the abolition of the office of manager of mills and logging, which operations will continue to be under his direction.

For the last three years Mr. Meyer has held the office of vice president of the Southern Loggers' Association, and largely through his efforts has this organization been made so valuable to logging superintendents in the South in helping them to solve the many difficult problems they encounter and in showing them how to conduct their operations in the most efficient manner and at the lowest possible cost.

Mr. Meyer has many friends in the lumber trade, all of whom are extending congratulations upon his well-deserved promotion.

LOGGING SUPERINTENDENTS IN ATTENDANCE AT FOURTH ANNUAL CONVENTION SOUTHERN LOGGING ASSOCIATION, GRUNEWALD HOTEL, NEW ORLEANS, LA., SEPTEMBER 29-30, 1913.



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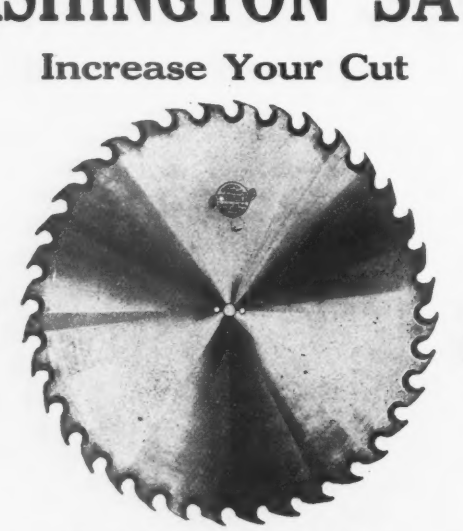

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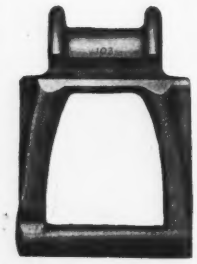

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LUMBERMEN'S INDEMNITY EXCHANGE.

The Only Inter-Insurance Association of the United States Which is Incorporated, Therefore the Only Company of This Character Doing Business Strictly Under the Law and Under the Jurisdiction of the Insurance Department of the Various States in Which It Operates.

For some twenty-five years prior to August 29th, 1903, the Fire Insurance Companies operating on the Pacific Coast of all types, Board, Non-Board and Mutual, based their charges for Insurance for manufacturers of Lumber upon the basis of obtaining all that traffic would bear, and in view of the fact that only a limited number of the Companies doing a general business in the United States east of the Rocky Mountains were operating upon the Pacific Coast, the competition was not keen enough to force an equitable adjustment of rates, the result being that the rates charged were universally excessive, and as a matter of fact, the average rate upon all lumbering plants on the Pacific Coast, sprinklered and unsprinklered, was about 6½%. The very lowest rate that could be obtained upon an automatic sprinklered saw mill at that time was 3%, and upon an automatic sprinklered planing mill 4%, with sufficient deficiency charge to bring the rate up to a figure far in excess of what the experience upon the classification justified. By the very nature of things this condition became unbearable to the Lumber Manufacturer.

In the early part of 1903, the Insurance Committee of the Pacific Coast Lumber Manufacturers' Association began to look into the matter of Insurance thoroughly and to cast around for some means to offset and do away with the odious condition as to rates then obtaining. It was finally decided to encourage the organization of an Inter-insurance Institution to be operated independent of the Association, but indorsed by the Association, and at a special meeting held by the Association in May, 1903, the Lumbermen's Indemnity Exchange and its plan of Insurance were indorsed by the Pacific Coast Lumber Manufacturers' Association, and the institution began business with eleven subscribers. It was estimated at that time that the overcharge for Insurance was not less than 50% of the premiums received. From the humble beginning of eleven members this organization has grown into a membership of One Hundred Sixty-eight, and has forced the Boards of Underwriters to reduce their rates 60% against the rates obtaining at that time. In addition to that, the Exchange has had an Underwriting gain from such reduced rates of $231,890 or 31.4%. The members themselves have gained more than $231,890, as this Exchange is writing its business at a figure considerably less than the present Board rates. In other words, it is not promising or guaranteeing a dividend, but is actually paying a dividend at the issuance of all its policies as against the present Board rates. The gain to the members of this Exchange since organization in the way of primary and actual dividends and surplus has been in excess of $560,000.

The first President of the Lumbermen's Indemnity Exchange was Mr. E. G. Griggs, who has held office continuously and is an active head of the organization. Mr. Griggs is Past President of the Pacific Coast Lumber Manufacturers' Association, President of the St. Paul & Tacoma Lumber Company, Past President of the National Lumber Manufacturers' Association, and is a man of large affairs and large personal means. The Board of Directors of the Exchange consists of E. G. Griggs, St. Paul & Tacoma Lumber Company; W. H. Boner, Weyerhaeuser Lumber Company; B. L. Willis, Fidelity Lumber Company; I. B. Bennett, Fresno Flume & Lumber Company; J. H. Bloedel, Bloedel Donovan Lumber Mills; Clark W. Thompson, Wind River Lumber Company; F. H. Jackson, Clear Lake Lumber Company, C. C. Bronson, Day Lumber Company; George H. Emerson, Northwestern Lumber Company; Edgar H. Bucklin, The Small & Bucklin Lumber Co. (Ltd.); J. E. Bratnober, Allen & Nelson Mill Company; Ralph H. Burnside, Willapa Lumber Company; and A. L. Paine, National Lumber & Box Company.

As a general thing Inter-insurance organizations are not incorporated or legally recognized, and are as a rule operated by the Managers. The so-called Advisory Board, as a rule, does not amount to anything. In our preliminary conferences it was concluded that this was a loose way of doing business. Therefore, the Lumbermen's Indemnity Exchange was incorporated as a Washington Corporation; is legally recognized by the Insurance Department; is legally supervised by the Insurance Department; its Board of Directors is legally sworn in to perform its duties of office, and it may be said here that this body, whether or not this condition has any bearing upon it, has never at any time been a complacent Board. A quorum meets at its office monthly and passes on every detail of the business; viz.: the balance sheets, members' credits, amount of insurance written for each member, the rate for which insurance is written, inspection reports of various plants, the re-insurance and Companies through which re-insurance is done, cancellations, return premiums, additional premiums, and in fact the entire minutia of the previous month's operations are gone over and approved or disapproved as the case might be by the Board of Trustees.

The funds of the organization are in the custody of Mr. C. C. Bronson, Treasurer of the Company, elected by the members annually.

The firm of James H. deVeuve & Co. has no interest in the Exchange other than that of Manager; it holds office only at the will of the members of this Exchange, being elected annually to hold office for one year. Having no financial interest in the Exchange, its incumbency depends entirely upon the merit of its operations. Thus, it might appear to you that the Lumbermen's Indemnity Exchange is what it started out to be, a lumber organization, made up of Lumber Manufacturers and controlled absolutely by them. To operate in this Exchange, a member gives to the Managers a limited Power of Attorney authorizing the Attorneys in Fact to carry on an

E. G. GRIGGS, PRESIDENT,
Lumbermen's Indemnity Exchange.

individual Underwriting business for him (between men upon whom he has voted) to a limited extent in accordance with the By-laws. Every safeguard is thrown around the operations of the Exchange, for each member, that is possible for the preservation of the interests of everybody concerned. The three most important essentials of the By-laws and of the Power of Attorney are as follows:

"A member has the right of rejection of any proposed member upon application of such member." In other words, one negative vote from one member of the Exchange as to the application of any proposed member disbars the applicant from association with the affairs of the Exchange, thereby giving each member full control over men he shall or shall not do business with when he becomes a member of the Exchange.

"A member has the right to decline to write upon the risk of any other member of the Exchange, providing his rejection of any risk is not based upon personal grounds, unless such personal opinion should have a bearing upon the moral hazard of the risk.

"A member has the right to withdraw from the Exchange and discontinue his entire liability by giving thirty days' notice, at which time he is permitted to withdraw from the Exchange all accumulations to his credit."

As to credits and cash dividends, it may be here stated, that the Exchange retains all credits of members until such credits amount to $4,000. On January First of each year, all sums in excess of $4,000 to a member's credit are returned as a cash dividend, it being deemed that $4,000 cash deposit is entirely sufficient to care for any obligations that might arise as an Underwriter to any member.

Under the rules of the Exchange, the plants of members must be inspected at regular intervals, and the inspections must be rigid; reports of these inspections are immediately sent to the owners of the plant inspected, their attention called to any defects which may have arisen, and through the office system of the Exchange, it is seen to that recommendations for improvements are properly carried out.

A very important condition bearing upon membership to the Exchange is in the matter of adjustments of fire losses. By the very nature of things the adjustment of fire losses is in the hands of the Managers; the Management being the creature of the Board of Trustees is in such position that under no condition can an arbitrary or unjust position be taken in the adjustment of fire loss, for the very simple reason that every member of this Exchange in event of a difference of opinion arising has the right of appeal to a higher authority, viz.: the Board of Directors. As the Board of Directors is made up of fellow manufacturers, it is only logical to assume that their sole desire will be to grant to their fellow member a square deal in every transaction that arises. Of course, such condition as an arbitrary manipulation of a loss is remote, but nevertheless, such condition frequently arises with stock insurance, and by the very nature of stock insurance business, the officers of these Companies having in their employ men who have worked for years as adjusters must be guided by their statements as to resistance or non-resistance; as to appraisal or non-appraisal; as to discount of claims or non-discount of claims, and as to all other matters bearing upon the adjustment of a claim. The Lumbermen's Indemnity Exchange has paid out in claims over One Million Dollars in the last eight years without an iota of friction of any nature. The losses of the Exchange have been promptly adjusted and promptly paid, the most notable achievement being the complete reconstruction of the sprinklered saw mill of the E. K. Wood Lumber Company, at Bellingham, Washington, such work being completed, all bills paid and the mill in operation in five weeks. You must, of course, be aware of the fact that in a large loss five weeks is usually consumed in matters of notices, preliminary work of adjusters, etc., before the job is really begun, and as a matter of fact it is a very uncommon thing for any large claimant to receive settlement on this Coast inside of three or four months.

Now, the Lumbermen's Indemnity Exchange was not organized nor is it operated for the purpose of being an Insurance Company. It is operated for the purpose of being a practical insurer of its members. If the rates we are obtaining are in excess of the amounts required to pay losses that money belongs to the members of the Exchange, each member receiving his share of that money in such proportion as the amount of Insurance he grants to the Exchange bears to the whole amount of risk. If in event of the money received not being sufficient to pay the losses, it is a self-evident proposition that the rates are too low, but if the rates should prove to be too low under this system of Insurance, and it should continue it immediately follows that the Board of Underwriters would resort to their old system of all that traffic would bear. Therefore, if the rates should prove too low, it is only necessary for the members to provide for the deficit by reasonable increase in rates. We do not believe the rates are too low at present, for the reason that experience running over ten years, which is ample time for the creation of perfect averages on a classification embracing the best plants on the Coast, has shown as above stated a gain of $231,890 for the Exchange.

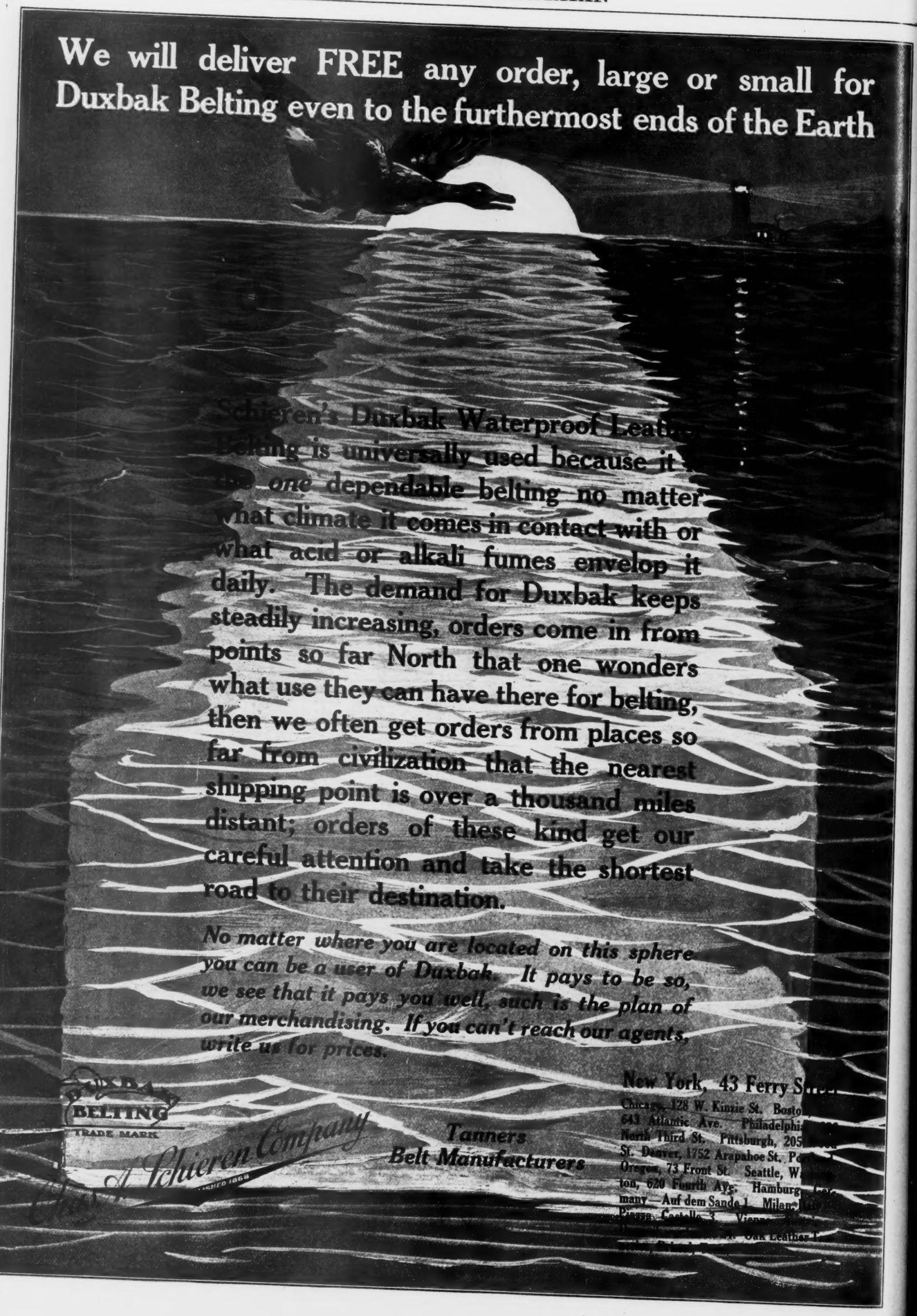
It is very desirable that Inter-insurance should not be confused with Mutual Insurance. The Insurance contract issued by subscribers of the Lumbermen's Indemnity Exchange is one of several and specific liability of known subscribers, while the contract issued by all Mutual Insurance Companies has behind it the joint liability of unknown members.

F. H. JACKSON,
Vice President.

C. C. BRONSON,
Treasurer.

J. E. BRATNOBER,
Secretary.

JAS. H. DE VEUVE,
Attorney and Manager.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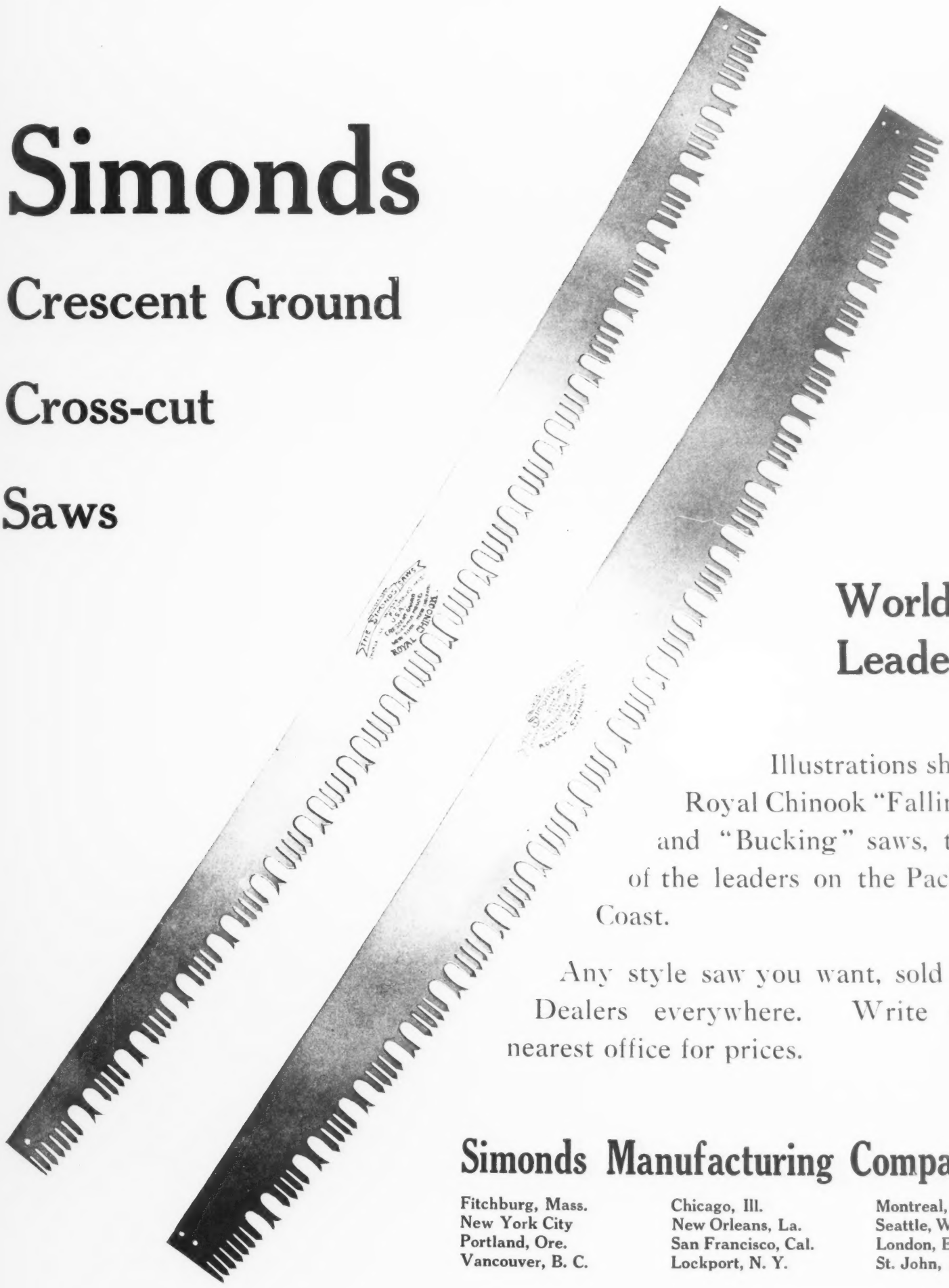
Crescent Ground

Cross-cut

Saws



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